When and Why is Religious Attendance Associated with Anti-Gay Bias? A Justification-Suppression Model Approach

by

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Abstract

Even in relatively tolerant countries, anti-gay bias remains socially divisive, despite being widely viewed as violating social norms of tolerance. From a Justification-Suppression Model (JSM) framework, social norms may generally suppress anti-gay bias in tolerant countries, yet bias may be "released" by religious justifications among those who resist gay rights progress. I hypothesized that more frequent religious attendance would be associated with greater anti-gay bias, that this relation would be stronger in countries where anti-gay bias more strongly violates social norms of tolerance, and that the relation between religious attendance and anti-gay bias would be partially accounted for by religious justifications. In Part 1, I examined the relation between religious attendance and anti-gay bias in the US. In Part 2, I examined the relation between religious attendance and anti-gay bias across different countries. Finally, in Part 3, I examined religious justifications for anti-gay bias. Across large, nationally representative US samples and international samples (representing a total of 97 different countries), over 215,000 participants, and various indicators of anti-gay bias (e.g., dislike, moral condemnation, opposing gay rights), more frequent religious attendance was uniquely associated with greater anti-gay bias, over and above religious fundamentalism, political ideology, religious denomination, and other theoretically relevant covariates. Moreover, in 4 of 6 multilevel models, religious attendance was associated with anti-gay bias in countries with greater gay rights recognition, but was unrelated to anti-gay bias in countries with lower gay rights recognition. Google searches for a religious justification ("love the sinner hate the sin") coincided temporally with gay-rights relevant searches. In U.S. and Canadian samples, much of the association between religious attendance and

anti-gay bias was explained by “sinner-sin” religious justification, with religious attendance not associated with anti-gay bias when respondents reported relatively low familiarity with this justification. These findings suggest that social divisions on homosexuality in relatively tolerant social contexts may be in large part due to religious justifications for anti-gay bias (consistent with the JSM). Potential interventions building on these findings may include encouraging religious leaders to promote norms of tolerance and acceptance, increasing intergroup contact between frequent religious attenders and gays, and perspective-taking exercises.

Keywords: Sexual orientation, prejudice, religious attendance, multi-level modelling, Justification-Suppression Model

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When and why is religious attendance associated with anti-gay bias? A Justification-Suppression Model approach[1]

There have been dramatic increases in recognition of gay rights in many Western countries, suggesting a broad cultural shift away from anti-gay bias (Herek & McLemore, 2013; Hoffarth & Hodson, 2014; Keleher & Smith, 2012; Kite, 2011). Yet legal rights for gays (e.g., gay marriage) are at the center of the "culture wars" in contemporary political discourse in Western countries, with many religious communities opposing gay rights, arguing that opposition is justified because homosexuality is immoral or sinful and therefore a violation of their religious beliefs (Herek & McLemore, 2013). Strong political resistance against gay rights progress appears to have emerged within many religious communities (Browne & Nash, 2014). For instance, many U.S. legislatures have recently debated or passed "religious freedom" bills that legally protect anti-gay discrimination if the discrimination has a religious basis (Carrero, 2016; Katz & Eckholm, 2016). This widely spread societal phenomenon suggests that, despite growing acceptance of homosexuality in secular society, belonging to a religious community may promote local social norms that justify anti-gay bias as a religious belief.

The Justification-Suppression Model (JSM; Crandall & Eshleman, 2003) of intergroup bias provides a valuable framework for understanding this phenomenon. According to the JSM, "genuine" prejudice (i.e., blatant, unfiltered bigotry) is rarely directly expressed because a variety of beliefs, values, and social norms suppress the prejudice. Thus, although intergroup bias can be freely expressed in some contexts, intergroup biases are often socially undesirable, and therefore expressions of intergroup

[1] An earlier version of this manuscript has been accepted for publication at the *Journal of Personality and Social Psychology* (Hoffarth, Hodson, & Molnar, in press). This manuscript is available at the following DOI: http://dx.doi.org/10.1037/pspp0000146

bias tend to be suppressed. Within contexts in which an intergroup bias is generally suppressed, biases are subsequently expressed to the extent that one can justify (or legitimize) the bias.

Most people are heterosexual, and thus heterosexuals make up a dominant majority across societies. Social inequalities exist across many different social groups (e.g., race, gender), and social inequalities tend to be maintained by providing social value and power to the dominant groups while disadvantaging socially marginalized groups (Hodson & Hoffarth, in press; Pratto, Sidanius, Stallworth, & Malle, 1994; Sidanius & Pratto, 1999). According to the "differences as deficits" model of sexual prejudice (Herek, 2010), non-heterosexual forms of sexual expression and non-heterosexual people tend to be stigmatized and devalued in comparison to the dominant heterosexual majority, and thus gays and lesbians represent a disadvantaged group that tends to be a target of bias. Anti-gay bias is strongly socially condemned within some contexts (e.g., countries with strong gay rights support). Western leaders regularly condemn anti-gay bias in political speeches and attend gay pride parades (The Canadian Press, 2016; Tumulty, 2013), and gay and lesbian characters increasingly appear in the media (GLAAD, 2016). In contrast, blatant anti-gay bias is freely expressed in others countries (e.g., countries where homosexuality is illegal; Kite, 2011) without being suppressed by social norms of tolerance. Homosexuality is punished by the death penalty in some countries (e.g., Iran, Saudi Arabia; see Itaborahay & Zhu, 2014). In Uganda, homosexuality is criminalized and citizens are required to report suspected cases of homosexuality to the police (Houttuin, 2015). In Jamaica, popular music celebrates murdering gay men and severe hate crimes (including murder) are often reported in the

media (West & Cowell, 2015). Thus, following the JSM, I would expect lower levels of anti-gay bias to be expressed, on average, in social contexts that condemn bias. However, even in these relatively tolerant contexts in which anti-gay bias may tend to be suppressed by social norms, anti-gay bias may be expressed to the extent that one can draw on religious justifications for expressing anti-gay bias.

For instance, personal religious attendance may facilitate anti-gay bias expressions in contexts in which anti-gay bias is otherwise condemned. Indeed, religious justifications for anti-gay bias are common in political rhetoric advocating against gay rights (Browne & Nash, 2014). Thus, I propose that religious attendance may be more strongly associated with anti-gay bias where anti-gay bias is condemned (i.e., high gay rights countries), but more weakly associated with anti-gay bias where anti-gay bias is socially acceptable (i.e., low gay rights countries). Given that justifications "release" socially condemned biases (Crandall & Eshleman, 2003), the JSM suggests that the relation between religious attendance and anti-gay bias may be at least partially accounted for by justifications for anti-gay bias, and religious attendance may be more strongly associated with anti-gay bias when one can draw on religious justifications for anti-gay bias.

Drawing on this theoretical framework, I proposed the following eight hypotheses. First, I hypothesized that there would be a consistent association between more frequent religious attendance and greater anti-gay bias in high gay rights countries such as the United States (H1), consistent with meta-analytic evidence (Whitley, 2009). Second, I hypothesized that the association between religious attendance and anti-gay bias would not be solely due to overlapping psychological constructs (e.g., political

ideology, religious fundamentalism) (H2), which has not been established in past research (Whitley, 2009). Third, I hypothesized that anti-gay bias would be lower, on average, in countries with greater recognition of gay rights (i.e., with more tolerant social norms) (H3). Fourth, I hypothesized that the association between religious attendance and anti-gay bias would be stronger in contexts where more tolerant social norms exist (e.g., countries recognizing gay rights, H4). For hypotheses 5-8, I focused on the expression of anti-gay bias in countries high in gay rights (i.e., the US and Canada) in which religious justifications should theoretically play an important role in the expression of anti-gay bias. Fifth, I predicted that religious justifications for anti-gay bias (specifically, "love the sinner hate the sin") would be more salient when gay rights are salient (H5). Sixth, I hypothesized that personal endorsement of religious justifications (e.g., "I love the sinner but hate the sin") would account for the relation between religious attendance and anti-gay bias (H6). Finally, I hypothesized that religious attendance would be more strongly associated with anti-gay bias when personal familiarity with religious justification is relatively high (H7), and that this interaction would be mediated by personal endorsement of religious justification (H8). Below I outline the rationale for these hypotheses.

Relevant to the first hypothesis, past research indicates that more frequent religious attendance is indeed associated with greater anti-gay bias (meta-analytic $r = .32$; Whitley, 2009). However, the current literature has not established whether the relation between religious attendance and anti-gay bias generalizes across different forms of anti-gay bias. Some forms of anti-gay bias are blatant and direct (e.g. disliking gay *people*) and therefore may be more difficult to justify, whereas other forms of bias are more subtle or couched in terms of values (e.g., morally opposing *homosexuality*) and therefore

easier to justify. Due to social norms that condemn blatant anti-gay bigotry, contemporary anti-gay rhetoric is increasingly framed in terms of *moral opposition* rather than dislike of gays and lesbians (Browne & Nash, 2014). As such, any religiously driven resistance to gay rights and tolerant social norms may promote subtle and indirect forms of anti-gay bias, and may be less strongly related to direct forms of anti-gay bias. Although positive attitudes toward a group and support for rights for gays and lesbians tend to coincide, this is not necessarily the case. For instance, positive attitudes toward a group can coincide with extreme levels of social inequality and segregation (see Dixon, Durrheim, Kerr, & Thomae, 2013). Therefore, it is important to examine both intergroup attitudes and support for the rights of marginalized groups. Consequently, I examined the relation between religious attendance and several different forms of anti-gay bias.

In relation to Hypothesis 2, the current literature has not established whether the relation between religious attendance and anti-gay bias is due to overlapping factors, a major limitation in the field (see Whitley, 2009). There are several "third variables" that could potentially confound this association. For example, religious fundamentalism is strongly associated with anti-gay bias (meta-analytic r = .45, Whitley, 2009; see also Altemeyer, 2003) as well as religious attendance. Moreover, right-wing ideologies overlap with religiosity (Jost et al., 2014) and are consistently linked to greater anti-gay bias (Herek & Glunt, 1993; Hodson, Harry, & Mitchell, 2009; Hoffarth & Hodson, 2014**)**. There may also exist differences in both religious attendance and anti-gay bias based on religious denomination (e.g., Buddhists, Catholics, Muslims, Protestants) and other social category differences (e.g., age, race, gender, socioeconomic status) (see Brumbaugh, Sanchez, Nock, & Wright, 2008; Herek, 1994, 2000; Hooghe, Claes, Harell,

Quintelier, & Dejaeghere, 2010). Therefore, I examined the unique relation between religious attendance and anti-gay bias while accounting for key covariates, to rule out the possibility that the relation between religious attendance and anti-gay bias is merely a consequence of overlapping variables.

I also examined anti-gay bias within different countries varying in gay rights recognition. Whereas anti-gay bias is socially unacceptable in countries with high gay rights recognition, anti-gay bias is more socially acceptable in countries with low gay rights recognition (Bailey et al., 2016; Kite, 2011); therefore, I expected that anti-gay bias would be lower (on average) in high gay rights countries (H3). In relation to Hypothesis 4, it is presently unknown whether the relation between individual differences in religious attendance and anti-gay bias varies as a function of societal gay rights recognition. As social norms shift from condemning gays to accepting gays, it is possible that religious attendance becomes less relevant. Hall, Matz, and Wood (2010), for instance, found that the relation between religiosity and anti-Black bias was stronger during the Civil Rights Era than now. The authors propose that this shift occurred because anti-Black bias became more socially unacceptable. Yet the JSM suggests that religious attendance may be more strongly associated with anti-gay bias in more pro-gay contexts. In countries where homosexuality is illegal or discouraged by the government, anti-gay prejudice is more socially acceptable (Bailey et al., 2016; Kite, 2011) and can be openly expressed without the psychological need for justification (Crandall & Eshleman, 2003). However, where a prejudice is condemned (e.g., due to social norms of tolerance), as is the case for anti-gay bias in countries that formally recognize gay rights, intergroup bias is typically suppressed, but can nonetheless find expression when there is psychological justification

for the bias (Crandall & Eshleman, 2003). Therefore, I predicted that religious attendance would be more strongly associated with anti-gay bias in countries with high (*vs*. low) gay rights recognition (H4).

But how might religious attendance be linked to justification of anti-gay bias? Belonging to a religious community can provide a sense of belonging to a moral community with distinct views about moral behaviors (Graham & Haidt, 2010). Many religious communities condemn homosexuality as immoral or sinful (Herek & McLemore, 2013), and clergy members often communicate that homosexuality is a sin that needs to be controlled and actively discouraged, not accepted (Filip-Crawford & Neuberg, in press). In other words, those who frequently (*vs*. infrequently) attend religious services may be exposed to norms about anti-gay bias that are distinct from norms outside of their religious community. Social norms provide guidance for how one should think, feel, and act in social situations (Cialdini, 2003) and exert influence across a variety of situations (Abrams, Wetherell, Cochrane, Hogg, & Turner, 1990; Cialdini, Reno, & Kallgren, 1990; Hogg & Abrams, 1988). In particular, social norms can either justify or suppress prejudice (Crandall, Eshleman, & O'Brien, 2002). Research on the role of norms suggests a distinction between societal (or "global") norms and provincial (or "local") norms, with local norms being particularly influential (Goldstein, Cialdini, & Griskevicius, 2008). According to Self Categorization Theory, norms are in large part influenced by group membership, with greater influence by ingroup norms than by norms relevant to outgroup members, strangers, or people in general (Abrams et al., 1990). Further, group membership can lead to polarized attitudes (i.e., more extreme attitudes) that extend beyond merely conforming to the ingroup (Abrams et al., 1990). Such

polarized attitudes may come to represent commitment to one's group membership in that what one "knows" about the world is, in part, a reflection of how one defines oneself (Abrams et al., 1990). Herek and McLemore (2013) argue that anti-gay bias can hold a social expressive function by signaling common values with like-minded others. I argue that religious attendance generally exposes people to ingroup norms that portray anti-gay bias as justified.

Consistent with this proposition, recent research suggests that those who frequently attend religious services may be more resistant to other social changes related to sexuality. Adolescent boys who frequently attend church view less pornography and demonstrate smaller age-related increases in porn consumption than their low-attending peers (Rasmussen & Bierman, 2016). In addition, social trends toward moral tolerance of homosexuality over the last several decades have been notably smaller among those who frequently attend religious services (d = .58) compared to those who do not (d = 1.03; Twenge, Sherman, & Wells, 2016). Both of these findings are consistent with the maintenance of more conservative social norms about sexuality within religious communities, despite social trends toward more permissive views of sexuality.

Relevant to the thesis, frequent attenders of religious services in countries with high recognition of gay rights are exposed to societal norms that condemn anti-gay bias, but are also exposed to the local norms of their religious community, which may portray anti-gay bias as justified. That is, participation in a community in which anti-gay bias is permissible, and opposition to homosexuality is actively promoted, may encourage anti-gay bias even if anti-gay bias is condemned in secular society at large. Thus, although anti-gay bias would generally be socially undesirable and considered *unjustified* in

countries that recognize gay rights, anti-gay bias may hold a desirable, *justified* social function (i.e., expressing the cultural values of one's religious community) from the perspective of religious attenders (Herek & McLemore, 2013). In contrast, those who frequently attend religious services in countries with low recognition of gay rights are likely exposed to global norms and local norms that both present anti-gay bias as justified, and therefore individual differences in religious attendance may have relatively little influence on anti-gay bias in more (*vs*. less) anti-gay contexts. Thus, I hypothesized that religious attendance would be more strongly associated with anti-gay bias within contexts that are relatively more tolerant of homosexuality (H4).

Within countries that are relatively more tolerant of homosexuality (e.g., the United States, Canada), arguments against tolerating homosexuality and supporting gay rights often come from a moral religious perspective (for recent examples in political debates, see Davidson, 2016; Easley, 2015; Goodstein, 2015; Peters & Nicas, 2015). For instance, arguments against same-sex marriage are often framed as protecting the sanctity of heterosexual marriage (Browne & Nash, 2014). Likewise, laws that legally permit anti-gay discrimination are primarily justified on the basis that such laws protect the freedom of expression of religious individuals who oppose homosexuality (Peters & Nicas, 2015). *Religious justifications*, that is, arguments that attempt to legitimize anti-gay bias as a moral religious expression, are relatively common in political rhetoric concerning gay rights (Browne & Nash, 2014; Carrero, 2016; Herek & McLemore, 2013; Katz & Eckholm, 2016). For instance, phrases such as "I love the sinner [i.e., gay people] but hate the sin [i.e., homosexuality]" appear to be used to legitimize one's anti-gay views as a moral stance rather than a form of prejudice (Altemeyer, 2003; Browne &

Nash, 2014). These justifications appear to be more subtle than blatant expressions of bigotry, and thus may be a more easily justified way of expressing anti-gay bias in contexts in which tolerance of homosexuality is valued. Importantly, these types of justifications appear to have emerged in the political discourse of countries with high recognition of gay rights (Browne & Nash, 2014), suggesting justifications such as "I love the sinner, but hate the sin" are likely particularly useful for understanding anti-gay bias in these contexts.

Such mechanisms that downplay or legitimize socially condemned intergroup biases are well documented in the psychological literature (Crandall & Eshleman, 2003; Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004; Hodson & MacInnis, 2016; Opotow, 1990). For instance, benevolent sexism has the surface appearance of love and positivity (i.e., putting idealized women on a pedestal, Glick & Fiske, 1996) yet largely functions to maintain sex-based hierarchies by assigning low-power sex roles to women (e.g., Chen, Fiske, & Lee, 2009; Glick, Diebold, Bailey-Werner, & Zhu, 1997; Glick & Fiske, 2001; Rudman & Glick, 2001). Indeed, benevolent and hostile sexism are strongly correlated (Glick & Fiske, 1996, 2001). As another example, prejudiced individuals use a variety of "legitimacy credits" as a justification for releasing the expression of socially proscribed prejudices (Choi, Crandall, & La, 2014). Prejudice may also be legitimized through framing derogatory humor as "just a joke" (Hodson, Rush, & MacInnis, 2010) or framing anti-gay bullying as "just boys being boys" (Hoffarth & Hodson, 2014). Such a finding would also be consistent with theorizing that anti-gay bias is gradually shifting to more justifiable means of expressing anti-gay bias as homosexuality is becoming more

tolerated (e.g., Herek & McLemore, 2013; Hoffarth & Hodson, 2014; Morrison & Morrison, 2003).

Based on the existing literature and political rhetoric involving religious justifications for anti-gay bias, I had two novel hypotheses related to religious justifications for anti-gay bias. First, I predicted that religious justifications for anti-gay bias (specifically, "love the sinner hate the sin") would be more salient when gay rights are salient (H5), and that religious justification (e.g., "I love the sinner, but hate the sin") would account for the relation between religious attendance and anti-gay bias (H6).

Finally, contemporary thinking emphasizes the complexity of the relation between religion and intergroup bias (e.g., Hunsberger & Jackson, 2005). Not only does the relation between religion and prejudice differ by social context (e.g., Hall et al., 2010) and bias target (Herek, 1987), but there is considerable individual variability in one's experience of religion (Burch-Brown & Baker, 2016), which likely impacts the relation between religious attendance and anti-gay bias. Beliefs and religious practices may vary as a function of one's specific religious community, which can be taken into account to more completely understand how religion relates to intergroup bias (Burch-Brown & Baker, 2016). Within the context of this thesis, some religious communities likely frequently communicate religious justifications for anti-gay bias such as "I love the sinner but hate the sin," whereas others may rarely (or never) communicate these religious justifications. Those more familiar with religious justifications may be more able to draw on religious justifications to "release" anti-gay bias, consistent with the JSM. Therefore, I hypothesized that religious attendance would be more strongly associated with anti-gay bias among those more (*vs.* less) familiar with the "I love the

sinner but hate the sin" religious justification (H7), and that this interaction pattern would be accounted for by personal endorsement of religious justifications (H8).

Overview of Analysis Plan. In Part 1, I test Hypotheses 1 and 2 using US data to examine the relation between religious attendance across several indicators of anti-gay bias, while accounting for several covariates. In Part 2, I test Hypotheses 3 and 4 using cross-national data, analyzing the relation between religious attendance and anti-gay bias as a function of country-level gay rights recognition. Finally, in Part 3, I test Hypotheses 4 through 8 with US and Canadian data, analyzing religious justifications, particularly the role of religious justifications in the relation between religious attendance and anti-gay bias. Please note that all studies in this manuscript were approved by the Brock University Research Ethics Board (REB 16-190 for Studies 1 through 8, REB 13-084 for Study 9, and REB 15-011 for Study 10), see Appendix F.

Part 1: religious attendance and anti-gay bias in the United States

In Part 1 (Studies 1-3), I analyzed the relation between individual differences in religious attendance and anti-gay bias using nationally representative US datasets.[2] Data can be accessed by following the URL in the Bibliography section for each dataset. The datasets examined in Part 1 have been used in past research using the same anti-gay bias variables as in the present research (see Baker & Smith, 2009; Bradberry & Jacobson, 2015; Brandt & Crawford, 2016; Carl, 2015; Crawford, Brandt, Inbar, & Mallinas, 2016; Elder & Greene, 2016; England, 2016; Franzen & Griebel, 2013; Gay, Lynxwiler, &

[2] I searched for nationally representative American datasets that included (1) a continuous measure of religious attendance, (2) an indicator of anti-gay bias, and (3) theoretically relevant covariates. For repeated cross-sectional studies (e.g., the General Social Survey), the most recently collected data was used. For the Baylor Religion Surveys, 2007 was the most recent data, but only had one indicator of anti-gay bias, whereas the 2005 dataset had 2 variables. Therefore, I analyzed both the 2005 and 2007 Baylor Religion Surveys.

Smith, 2015; Glick, Cleary, & Golden, 2015; Hoffarth & Jost, in press; Perry, 2013a, 2013b; Perry & Schnabel, in press; Perry & Whitehead, in press; Rowatt, LaBouff, Johnson, Froese, & Tsang, 2009; Schnabel, 2016; Schnabel & Sevell, 2017; Sherkat, in press; Smith & Johnson, 2010; Twenge et al., 2015; Whitehead, 2007, 2014). However, these past studies have examined different research questions than in the present research. I hypothesized that greater religious attendance would be uniquely associated with greater anti-gay bias (H1), over and above covariates included in the analyses (H2)[3]. All analyses utilized bootstrapping with 1,000 iterations using robust standard errors.

Study 1: 2005 and 2007 Baylor Religion Surveys

Method. Data were analyzed from the 2005 (N = 749) and 2007 (N = 1,141) Baylor Religion Survey (Baylor University, 2005, 2007), freely available datasets sampling nonoverlapping participants. National probability samples of American residents were interviewed through a combination of telephone and self-administered mailed surveys conducted by Gallup Poll.

Measures.

***Religious attendance*.** Participants indicated how often they attend religious services on a 9-point scale (ranging from 1 = *never*, to 9 = *several times a week*), with higher (*vs*. lower) scores indicating more frequent religious attendance.

[3] Due to the large number of covariates and potentially strong correlations between some sets of predictors (e.g., Republican party identification and political ideology), I examined whether there were indications of multicollinearity among the predictor variables in each multiple regression. For all analyses, multicollinearity diagnostics indicated no issues with multicollinearity (i.e., all tolerance values > .50, all variance inflation factors < 2). Further, I also tested models including only theoretically similar sets of covariates, and models excluding conceptually overlapping covariates (e.g., Republication party identification and political ideology). In all analyses within each dataset, I still found that greater religious attendance was associated with greater anti-gay bias, suggesting collinearity has not substantially impacted the results.

Moral acceptance of homosexuality (only available in 2005). Participants were asked, "How do you feel about sexual relations in the following circumstances? Between two adults of the same sex." Possible responses ranged from *always wrong* (1) to *not wrong at all* (4).

Gay marriage acceptance. Participants were asked, "How do you feel about the following marriage and family related issues? Gay Marriage." Possible responses ranged from *always wrong* (1) to *not wrong at all* (4).

Covariates. The covariates were: religious fundamentalism (0 = *not fundamentalist*, 1 = *fundamentalist* in 2005; ranging from 1 = *not at all fundamentalist*, to 4 = *very fundamentalist* in 2007), conservative political ideology (only available in 2007, ranging from 1 = *extremely liberal*, to 7 = *extremely conservative*), Republican party identification (ranging from 1 = *strong Democrat*, to 7 = *strong Republican*), gender (0 = *female*, 1 = *male*), age, race (only available in 2005, dummy coded as *White vs. Black*; *Other*), education level (ranging from 1 = *8^{th} grade or less*, to 7 = *post-graduate work/degree*), household income (ranging from 1 = *$10,000 or less*, to 7 = *$150,001 or more*), and religious denomination (dummy coded as *None vs. Catholic*; *Black Protestant*; *Evangelical Protestant*; *Mainline Protestant*; *Jewish* [only available in 2005]; *Other*).

Results. More frequent religious attendance was associated with less moral acceptance of homosexuality (only asked in 2005, β = -.45, b = -.22, 95% CI [-.24, -.19]), and less gay marriage acceptance (in 2005, β = -.41, b = -.20, 95% CI [-.23, -.17]; in 2007, β = -.45, b = -.25, 95% CI [-.27, -.22]), all $ps < .001$. In regressions that included covariates, religious attendance was uniquely associated with less moral acceptance of

homosexuality, β = -.21, b = -.10, 95% CI [-.14, -.07], and lower gay marriage acceptance (in 2005, β = -.16, b = -.08, 95% CI [-.11, -.05]; in 2007, β = -.22, b = -.12, 95% CI [-.15, -.09]) all ps < .001, see Table 1 and 2.

Table 1: Relations between religious attendance and anti-gay bias, controlling for covariates (Baylor Religion Survey, 2005), Study 1.

Outcome	Moral Acceptance of Homosexuality		Gay Marriage Acceptance	
	b (SE)	*β*	*b (SE)*	*β*
Age	-.01 (.00)**	-.10	-.01 (.00)***	-.10
Gender (male)	.01 (.08)	.01	.08 (.07)	.03
Republican Party Identification	-.23 (.02)***	-.34	-.30 (.02)***	-.44
Education	.05 (.03)	.05	.07 (.03)**	.07
Income	.10 (.03)***	.11	.09 (.03)**	.09
Race (White vs)				
Black	-.40 (.36)	-.06	-.09 (.37)	-.01
Other Race	-.02 (.18)	.00	-.16 (.18)	-.03
Religious Fundamentalism	-.36 (.10)**	-.09	-.39 (.10)***	-.10
Religious Denom (none *vs*)				
Catholic	-.60 (.14)***	-.18	-.55 (.15)***	-.17
Black Protestant	-1.04 (.47)**	-.11	-1.50 (.46)***	-.16
Evangelical Protestant	-.98 (.15)***	-.32	-.82 (.15)***	-.26
Mainline Protestant	-.57 (.13)***	-.18	-.45 (.13)**	-.14
Jewish	-.10 (.21)	-.02	-.21 (.23)	-.03
Other Religion	-.29 (.21)	-.05	-.04 (.19)	.01
Religious attendance	**-.10 (.02)*** **	**-.21**	**-.08 (.02)*** **	**-.16**
R^2		.44		.47

Note. ** p < .01, *** p < .001. Denom = Denomination. Standard errors are based on bootstrap samples with 1,000 iterations.

Table 2: Relation between religious attendance and gay marriage acceptance, controlling for covariates (Baylor Religion Survey, 2007), Study 1.

Outcome	Gay Marriage Acceptance	
	b (SE)	*β*
Age	-.01 (.00)*	-.05
Gender (male)	.25 (.07)***	.08
Conservative Political Ideology	-.38 (.04)***	-.39
Republican Party Identification	-.09 (.03)**	-.11
Education	.07 (.02)**	.07
Income	.07 (.03)**	.07
Religious Fundamentalism	-.13 (.04)**	-.08
Religious Denom. (none vs)		
Catholic	-.28 (.13)*	-.08
Evangelical Protestant	-.26 (.14)*	-.07
Black Protestant	-.72 (.27)**	-.08
Mainline Protestant	-.23 (.13)	-.06
Other Religion	-.05 (.14)	-.01
Religious Attendance	**-.12 (.01)*** **	**-.22**
R^2		.52

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Denom = denomination. Standard errors are based on bootstrap samples with 1,000 iterations.

Study 2: 2014 General Social Survey

Method. Participants consisted of American residents recruited to participate in the General Social Survey (GSS; Smith, Marsden, Hou, & Kim, 2015), a freely available nationally representative dataset. Either paper-and-pencil surveys or computer-assisted surveys were distributed in person from March to May of 2014 (N = 1,497 for moral acceptance of homosexuality; N = 1,533 for gay marriage acceptance).

Measures.

***Religious attendance*.** Participants indicated how frequently they attended religious services on a 9-point scale (ranging from 0 = *never*; to 8 = *several times a week*), with higher scores reflecting more frequent religious attendance.

Moral acceptance of homosexuality. Participants were asked "What about sexual relations between two adults of the same sex – do you think it is *always wrong* (1), *almost always wrong* (2), *wrong only sometimes* (3), or *not wrong at all* (4)?" Higher scores indicated more moral acceptance of homosexuality.

Gay marriage support. Participants indicated agreement with the statement "Homosexual couples should have the right to marry one another." on a scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with higher scores indicating more gay marriage support.

***Covariates*.** The covariates were: age, sex (*woman* = 0, *man* = 1), education level (ranging from 0 = *no formal schooling* to 20 = *8 or more years of college*), race (dummy-coded as *White vs. Black*; *Other Race*), size of city (recoded from raw values into a 10-point scale, ranging from 1 = < *2,000*, to 10 = ≥ *1,000,000*), religious denomination (dummy-coded, *none/other* [coded as 0] *vs. Protestant and non-denominational Christian*; *Catholic*; *Jewish*), Republican party identification (ranging from 0 = *strong Democrat*, to 6 = *strong Republican*), conservative political ideology (ranging from 1 = *extremely liberal*, to 7 = *extremely conservative*), and religious fundamentalism (1 = *liberal*, 2 = *moderate*, 3 = *fundamentalist*).

Results. More frequent religious attendance was associated with less moral acceptance of homosexuality, β = -.38, b = -.19, 95% CI [-.21, -.16], p < .001, and lower gay marriage acceptance, β = -.35, b = -.19, 95% CI [-.21, -.16], p < .001. Controlling for covariates, religious attendance was uniquely associated with less moral acceptance of homosexuality, β = -.24, b = -.12, 95% CI [-.15, -.10], p < .001, and lower gay marriage acceptance, β = -.21, b = -.11, 95% CI [-.14, -.08], p < .001, see Table 3.

Table 3: Relation between religious attendance and anti-gay bias, controlling for covariates (General Social Survey, 2014), Study 2.

Outcome	Moral Acceptance of Homosexuality		Gay Marriage Acceptance	
	b (SE)	*β*	*b (SE)*	*β*
Age	-.01(.00)***	-.17	-.02(.00)***	-.18
Sex (male)	-.31(.06)***	-.11	-.27(.06)***	-.09
Republican Party Identification	-.02(.02)	-.04	-.05(.02)**	-.07
Conservative Political Ideology	-.17(.03)***	-.18	-.23(.03)***	-.23
Education	.10(.01)***	.21	.10(.01)***	.21
Size of City	.01(.01)	.03	.03(.01)**	.06
Race (White vs)				
Black	-.30(.11)**	-.08	-.36(.11)***	-.09
Other Race	-.17(.11)	-.03	-.19(.11)	-.04
Religious Fundamentalism	-.37(.06)***	-.19	-.24(.06)***	-.12
Rel. Den. (none/other vs)				
Catholic	.45(.11)***	.14	.36(.11)**	.10
Jewish	.35(.25)	.03	.33(.30)	.03
Protestant/ Other Christian	.10(.12)	.04	-.06(.11)	-.02
Religious Attendance	**-.12(.01)*** **	**-.24**	**-.11(.01)*** **	**-.21**
R^2		.34		.34

Note. ** $p < .01$, *** $p < .001$. Rel. Den. = Religious Denomination. Standard errors are based on bootstrap samples with 1,000 iterations.

Study 3: 2012 American National Election Study

Method. Data were analyzed from the 2012 American National Election Study (ANES, 2014), a freely available dataset. A national probability sample of US residents was interviewed through face-to-face and/or telephone methods. Interviews were conducted during the period directly preceding national-level US elections (N = 4,732 for liking of gays, N = 2,542 for gay anti-discrimination support, N = 2,562 for support for gays in the military, N = 5,000 for gay adoption support).

Measures.

***Religious attendance*.** Participants indicated how frequently they attended religious services on a 5-point scale (ranging from 0 = *never/no religious preference*; to 4 = *every week*), with higher scores indicating more frequent religious attendance.

***Thermometer rating of gays*.** Participants were asked to rate their favorability toward gays and lesbians, on a scale ranging from 0 (*most negative*) to 100 (*most positive*), with higher scores indicating more positive attitudes toward the group. For comparison purposes, I also analyzed thermometer ratings of atheists and Blacks, measured on 0 to 100 scales.

***Gay anti-discrimination support*.** Participants were asked: "Do you favor or oppose laws to protect homosexuals against job discrimination?" with responses ranging from 1 = *oppose strongly* to 4 = *favor strongly*.

***Support for gays in the military*.** Participants were asked: "Do you think homosexuals should be allowed to serve in the United States Armed Forces or don't you think so?" with responses ranging from 1 = *feel strongly should not be allowed* to 4 = *feel strongly should be allowed*.

***Gay adoption support*.** Participants were asked: "Do you think gay or lesbian couples, in other words, homosexual couples, should be legally permitted to adopt children?" with response options of *No* (0) or *Yes* (1).

***Covariates*.** The covariates were: age, gender (*female* = 0, *male* = 1), education, race (dummy-coded as *White vs. Black*; *Asian*; *American Indian*; *Hispanic*; *Other/Multiracial*), religious denomination (dummy-coded as *none/other vs*. *Protestant*; *Catholic*; *Jewish*), Republican Party identification (ranging from 1 = strong *Democrat*, to

7 = *strong Republican*), and conservative political ideology (ranging from 1 = *extremely liberal*, to 7 = *extremely conservative*).

Results. More frequent religious attendance was associated with lower thermometer rating of gays, β = -.23, *b* = -3.84, 95% CI [-4.31, -3.34], less support for anti-gay discrimination bans, β = -.19, *b* = -.13, 95% CI [-.15, -.10], lower support for gays in the military, β = -.19, *b* = -.11, 95% CI [-.14, -.09], and lower probability of supporting (*vs*. opposing) gay adoption, *b* = -.40, 95% CI [-.44, -.36], Wald = 456.09, all *p*s < .001. Controlling for the covariates, religious attendance was uniquely associated with lower thermometer rating of gays, β = -.16, *b* = -2.12, 95% CI [-2.54, -1.64], less support for anti-gay discrimination bans, β = -.14, b = -.09, 95% CI [-.12, -.06], lower gay military support, β = -.14, b = -.08, 95% CI [-.11, -.06], and lower probability of supporting (*vs*. opposing) gay adoption, *b* = -.35, 95% CI [-.40, -.31], Wald = 255.11, all *p*s < .001 (see Table 4).

Analyses of thermometer ratings of atheists and Blacks. I next explored the generalizability of the results to different outgroups by examining the relations between religious attendance and attitude thermometer ratings of atheists (a religious outgroup) and Blacks (which I expected would not be strongly related to religiosity, see Hall et al., 2010). At a bivariate level, more frequent religious attendance was associated with lower thermometer ratings of atheists, β = -.26, *b* = -4.23, 95% CI [-4.68 , -3.75], *p* < .001, which held when controlling for covariates, β = -.16, *b* = -2.62, 95% CI [-3.08 , -2.15], *p* < .001. At a bivariate level, more frequent religious attendance was actually associated with *higher* thermometer ratings of Blacks, β = .13, *b* = 1.78, 95% CI [1.41 , 2.12], *p* < .001, which also held when controlling for covariates, β = .10, *b* = 1.41, 95% CI [1.00,

Table 4: Relation between religious attendance and anti-gay biases, controlling for covariates (American National Election Study, 2012), Study 3.

Outcome	Thermometer Rating of Gays		Gay Anti-Discrimination Support		Support for Gays in the Military		Gay Adoption Support†
	b (SE)	*β*	*b (SE)*	*β*	*b (SE)*	*β*	*b (SE)*
Age	-.12(.02)***	-.07	-.00(.00)	-.03	.00(.00)	-.03	-.02(.00)***
Gender (male)	-8.51(.72)***	-.15	-.13(.04)**	-.06	-.15(.04)***	-.08	-.47(.07)***
Republican Party Identification	-1.48(.23)***	-.12	-.06(.01)***	-.12	-.06(.01)***	-.14	-.16(.02)***
Conservative Political Ideo.	-4.47(.32)***	-.24	-.15(.02)***	-.20	-.10(.02)***	-.16	-.37(.03)***
Education	2.38(.23)***	.14	.08(.01)***	.12	.07(.01)***	.12	.22(.02)***
Race (White *vs.*)							
Black	-.61(1.14)	-.01	.06(.06)	.02	-.08(.06)	-.03	-.69(.11)***
Asian	-7.33(2.85)*	-.03	.05(.16)	.01	.19(.08)*	.02	-.54(.32)*
American Indian	-18.51 (4.62)***	-.05	-.25(.30)	-.02	-.27(.29)	-.02	-1.71(.51)***
Hispanic	.91(1.09)	.01	.02(.06)	.01	-.08(.06)	-.03	-.73(.11)***
Other/Multi	-.66(1.95)	.00	-.15(.11)	-.03	.12(.09)	.02	-.48(.18)**
Rel. Den. (none/other *vs.*)							
Catholic	3.57(.97)***	.06	.14(.05)**	.06	.17(.05)***	.08	.37(.10)***
Jewish	5.09(2.50)*	.03	.03(.13)	.00	-10(.12)	-.02	.58(.27)*
Protestant	-1.84(.89)*	-.03	-.06(.05)	-.03	-.06(.05)	-.03	-.09(.08)
Religious Attendance	**-2.78(.24)*** **	**-.16**	**-.09(.01)*** **	**-.14**	**-.08(.01)*** **	**-.14**	**-.35(.02)*** **
R^2		.23		.15		.14	.13

Note. † Gay Adoption Support is a dichotomous variable, and therefore standardized regression weights are not applicable. The R^2 value for Gay Adoption Support represents the Nagelkerke Pseudo R^2 for the model. Ideo = ideology. Rel. Den. = Religious Denomination. * $p < .05$, ** $p < .01$, *** $p < .001$. Standard errors are based on bootstrap samples with 1,000 iterations.

1.78], $p < .001$. Thus, religious attendance was associated with greater anti-atheist bias (similar to anti-gay bias), but was associated with lower anti-Black bias[4]. Finally, I

[4] These results held when excluding Black participants from the sample. It was not possible to exclude atheists from the sample for the atheist thermometer ratings because atheists were not categorized separately in the ANES.

included the thermometer ratings of atheists and Blacks in a regression predicting thermometer rating of gays (along with religious attendance and the other covariates). More frequent religious attendance was uniquely associated with more negative thermometer ratings of gays, even when accounting for all of the previously included covariates and both the thermometer ratings of atheists and Blacks[5], β = -.13, b = 2.12, 95% CI [-2.54 , -1.64], $p < .001$. Thus, although religious attendance is also associated with greater anti-atheist bias and lower anti-Black bias, the relation between religious attendance and anti-gay bias is statistically distinct from these other biases.

Part 1 Summary

Part 1 revealed consistent evidence of a statistically unique association between greater religious attendance and greater anti-gay bias, demonstrating considerable support for H1 and H2 in four large, nationally representative datasets. Religious attendance was associated with all types of bias, including moral opposition to homosexuality, opposition to gay rights recognition (i.e., gay marriage, gay adoption, anti-gay discrimination bans, gays serving in the military), and dislike toward gays. These findings indicate that religious attendance is associated with anti-gay bias generally, rather than only being associated with certain types of anti-gay bias. In addition, all of these relations were unique from strong, theoretically important covariates, including religious fundamentalism, conservative political ideology, Republican party identification, and religious denomination. Thus, the relation between religious attendance and anti-gay bias is not solely the result of overlap with several other conceptually relevant constructs.

[5] I also conducted multiple regressions only statistically controlling for thermometer ratings of atheists or controlling for thermometer ratings of Blacks. The results were nearly identical.

Part 2: Religious attendance and anti-gay bias in a global context

In Part 2, I analyzed the relation between individual level religious attendance and anti-gay bias (Level 1), *nested in countries that vary in gay rights recognition* (i.e., Level 2) to examine H3 and H4[6]. Gay rights recognition was measured for each country using the annual ILGA (i.e. International Lesbian, Gay, Bisexual, Trans and Intersex Association) "State-Sponsored Homophobia" report of gay rights laws. Using multilevel modeling (MLM), I examined whether the positive relation between individual-level religious attendance and anti-gay bias, controlling for covariates, varied between countries as a function of country-level gay rights recognition (i.e., country-level norms).

Most research on religiosity and anti-gay bias focuses on North American samples (Whitley, 2009), limiting cross-national comparisons or generalizations. Using MLM allowed me to test directly the hypothesis that individual differences in religious attendance are more strongly associated with anti-gay bias in more tolerant contexts by examining the simultaneous role of individual-level influences (i.e., how often a person attends religious services) and nation-level influences (i.e., how strongly the country recognizes gay rights) (Snijders & Bosker, 2012). MLM is increasingly recognized as critical for examining whether social contexts moderate individual-level effects (e.g., Christ et al., 2014; Gebauer et al., 2014; MacInnis, Page-Gould, & Hodson, 2017; Schmid, Al Ramiah, & Hewstone, 2014; Stavrova, 2015; Van Assche, Roets, De keersmaecker, & Van Hiel, in press**)** and is thus well-suited for the research goals.

In Part 2, I employed MLM using HLM version 7.01 software (module HLM2) to

[6] I searched for multi-national datasets that included (1) a continuous measure of religious attendance, (2) an indicator of anti-gay bias, and (3) theoretically relevant covariates that were measured in the same way across all the countries with data available. For repeated cross-sectional studies (e.g., the European Values Survey), the most recently collected data were used.

examine the effect of religious attendance within countries that vary in gay rights recognition. Missing data were estimated using restricted PQL estimation for dichotomous outcomes, and full maximum likelihood for continuous outcomes. Data consisted of cross-sectional self-report surveys, with individuals (Level 1) nested in countries (Level 2), consistent with past research on cross-sectional MLM analyses (e.g., Christ et al., 2014; Gebauer et al., 2014; MacInnis et al., 2017; Schmid, Al Ramiah, & Hewstone, 2014; Stavrova, 2015; Van Assche et al., in press). As in Part 1, I modeled religious attendance as an individual-level (i.e., Level 1) variable. Given my interest in the unique relation between religious attendance and anti-gay bias, I tested a model with no covariates in Model 1 and then included all theoretically meaningful Level 1 covariates in Model 2, with Model 2 directly testing the hypotheses. For all analyses, there was significant variability in both the intercept of the criterion (i.e., anti-gay bias) and the slope of religious attendance on the criterion in each dataset (see Tables 5 through 8 for intraclass correlation coefficients; ICCs). Therefore, I utilized a random intercept, random slope model for all analyses, with country-level gay rights recognition regressed on both the intercept of the outcome and the slope of religious attendance, as defined by the following general equation:

Level 1: $\eta_{ij} = \beta_{0j} + \beta_{1j}*(Attendance_{ij}) + \beta_{2j}*(Covariate1_{ij}) + \ldots + \beta_{Nj}*(CovariateN_{ij}) + e$ij

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}*(Rights_j) + u_{0j}$

$\beta_{1j} = \gamma_{10} + \gamma_{11}*(Rights_j) + u_{1j}$

Attendance = frequency of religious attendance, Rights = country-level gay rights recognition

Gay rights recognition was the Level 2 variable of interest, operationally defined as the extent to which gay rights are legally recognized by the country's government. Ratings for each country were assigned by using the ILGA (i.e., International Lesbian, Gay, Bisexual, Trans and Intersex Association) "State-Sponsored Homophobia" report of gay rights laws, an annual comprehensive report of the legal status of homosexuality (i.e., legal *vs*. banned), marital rights, adoption rights, and legal protections of gays and lesbians (e.g., hate crime and anti-discrimination laws; ILGA, 2015; see also: Bruce-Jones & Itaborahay, 2011; Itaborahay, 2012; Itaborahay & Zhu, 2013, 2014; Ottoson, 2008, 2009, 2010). Note that the ILGA recorded different gay rights laws in different years, and therefore the range of "gay rights recognition" scores vary somewhat from analysis to analysis. For example, data on anti-gay hate speech laws were only available in more recent versions of the State-Sponsored Homophobia report. See Supplemental Tables 1 through 4 for the calculation of each country's rating within each dataset.

As in Part 1, I focus on the statistically unique association between religious attendance and anti-gay bias. Following Part 1, I predicted that overall (i.e., at the mean level of gay rights recognition), greater religious attendance would be uniquely associated with greater anti-gay bias (supporting H1), over and above covariates (supporting H2). I predicted that greater gay rights recognition (at Level 2) would be associated with lower anti-gay bias, reflecting social norms of tolerance (supporting H3). Expecting resistance to more tolerant cultural norms, I hypothesized a stronger relation between religious attendance and anti-gay bias in countries relatively higher (*vs*. lower) in gay rights recognition (supporting H4). Note that unstandardized regression weights are reported for multilevel models in keeping with common practice.

I analyzed several international datasets. Data can be accessed by following the URL in the Bibliography section for each dataset. The datasets examined in Part 2 have been used in past research using the same anti-gay bias variables as in the present research (see Barrientos, 2016; Comșa, 2010; Deutsch & Welzel, 2016; Donaldson, Handren, & Lac, 2017; Klicperová-Baker & Košťál, 2015; Ó Féich & O'Connell, 2015; Slenders, Sieben, & Verbakel, 2014; Spierings, Lubbers, & Zaslove, 2017; Stanisevski, 2015; Van Assche et al., in press). However, these past studies have examined different research questions than in the present research.

Study 4: European Values Study

Method. Data were analyzed from Wave 4 of the European Values Study (EVS, 2010, 2011), a freely available, nationally representative dataset (collected 2008 or 2009). Data were collected through face-to-face interviews in the predominant language. Data were analyzed for 45 European countries (N = 65,842 participants) that included all variables of interest (see Appendix A for information on countries examined). Religious attendance, all continuous covariates, and gay rights recognition were grand-mean centered; dichotomous covariates were dummy-coded.

Measures.

***Religious attendance (Level 1*).** Participants were asked, "Apart from weddings, funerals and christenings, about how often do you attend religious services these days?" with response options ranging from 1 = *never or practically never* to 8 = *more than once a week*.

Gay adoption support (Level 1). Participants were asked how they feel about the statement "Homosexual couples should be able to adopt children," with response options ranging from 1 = *disagree strongly* to 5 = *agree strongly*.

Covariates (Level 1). The covariates were: political ideology (ranging from *left* = 1, to *right* = 10), age, sex (dummy-coded 0 = *female*, 1 = *male*), education level (highest education level attained, ranging from 1 = *inadequately completed elementary education* to 8 = *university with degree*), size of town (i.e., population of town where interview was conducted, ranging from 1 = *under 2,000* to 8 = *500,000 and more*), and religious denomination (dummy-coded for each denomination, 0 = *no religion*).

Gay rights recognition (Level 2). Gay rights recognition was calculated based on the 2008 State-Sponsored Homophobia report conducted by the ILGA (Ottoson, 2008). For each country, an aggregate score was calculated based on a range of laws regarding homosexuality (e.g., anti-discrimination laws, same-sex marriage, bans on homosexuality), with possible scores ranging from -2 (indicating no legal rights for gays and a death penalty for homosexuality) to +7 (indicating anti-discrimination bans and hate crime laws, legalized gay marriage, and full adoption rights), actual range = -1 to +6. See Appendix A, Supplemental Table 1 for calculation of each country's gay rights recognition score.

Results. At Level 1, greater religious attendance was uniquely associated with less gay adoption support, b = -.04, 95% CI [-.05, -.03], $t(43)$ = -6.44, $p < .001$, see Table 5. At Level 2, higher gay rights recognition was associated with greater gay adoption support, b = .17, 95% CI [.13, .21], $t(43)$ = 7.82, $p < .001$, consistent with H3. Consistent with H4, religious attendance was more strongly associated with less gay adoption

Table 5: Relation between individual-level religious attendance, country-level gay rights recognition, and gay adoption support (European Values Study, Wave 4, 2008-9), Study 4.

Outcome	Gay adoption support	
	Model 1 (no covariates)	Model 2 (with covariates)
	b (SE)	*b (SE)*
Intercept	2.31 (.05)***	2.50 (.06)***
Individual level		
Conservative Political Ideology		-.05 (.01)***
Age		-.01 (.00)***
Sex (male)		-.25 (.03)***
Education level		.04 (.01)***
Size of city		.01 (.00)***
Religious denomination (none vs.)		
Buddhist		.66 (.24)**
Catholic		-.07 (.02)**
Protestant		-.01 (.04)
Orthodox Christian		-.12 (.04)***
Non-denom. Christian		-.03 (.06)
Hindu		-.46 (.29)
Jewish		.08 (.11)
Muslim		-.26 (.07)***
Other religion		-.16 (.06)*
Religious Attendance	**-.06 (.01)*** **	**-.04 (.01)*** **
Country level		
Gay Rights Recognition	.18 (.02)***	.17 (.02)***
Slope of Religious Attendance		
Gay Rights Recognition	**-.02 (.00)*** **	**-.02 (.00)*** **
Individual variance (residual)	1.37 (1.36)	1.37 (1.35)
Intercept variance (residual)	.23968 (.12316)***	.23968 (.09729)***
Intercept ICC	.149	.149
Slope variance (residual)	.00288 (.00171)***	.00288 (.00134)***
Slope ICC	.002	.002

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. ICC = intraclass correlation coefficient. Unstandardized effects are presented.

support in countries higher (*vs*. lower) in gay rights recognition, b = -.02, 95% CI [-.02, -.01], $t(43)$ = -4.68, p < .001. See Figure 1 for simple slopes (i.e., relations at low gay rights recognition [μ-1*SD*] and high gay rights recognition [μ+1*SD*]). At high gay rights recognition, religious attendance was more strongly associated with less gay adoption support, b = -.07, 95% CI [-.08, -.05], $t(43)$ = -8.77, p < .001. At low gay rights recognition, however, religious attendance was not significantly associated with gay adoption support b = -.01, 95% CI [-.03, .01], $t(43)$ = -1.10, p = .276.

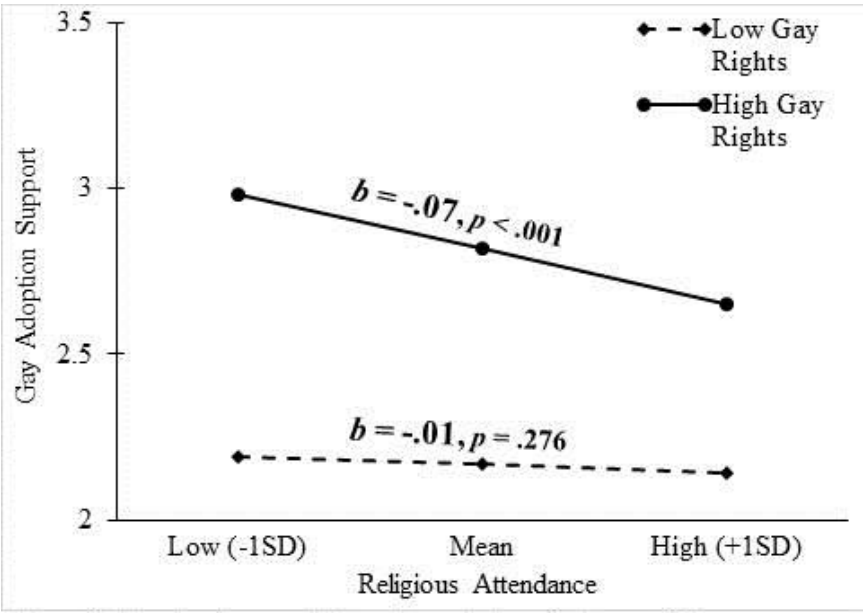

Figure 1: Simple slopes of the unique relation between religious attendance and gay adoption support at low (μ-1SD) and high (μ+1SD) gay rights recognition at the country-level, European Values Study, Wave 4, Study 4.

Study 5: European Social Survey

Method. Data were analyzed from Wave 6 of the European Social Survey (ESS, 2014), collected in 2012. National probability samples were collected through face-to-face interviews in the predominant language. Data were analyzed for 27 European countries (N = 42,057 participants) that included all variables of interest (see Appendix B, Supplemental Table 2, for information on countries examined). Religious attendance,

all continuous covariates, and gay rights recognition were grand-mean centered; dichotomous covariates were dummy-coded.

Measures.

Religious attendance (Level 1). Participants were asked "Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?", with responses ranging from 1 = *never* to 7 = *every day*.

Support for gay freedoms (Level 1). Participants rated agreement with the following statement: "Gay men and lesbians should be free to live their own life as they wish," with responses ranging from 1 = *disagree strongly* to 5 = *agree strongly*.

Covariates (Level 1). The covariates were: age, gender (0 = *female*, 1 = *male*), education (ranging from 1 = *less than lower secondary education*, to 5 = *tertiary education completed*), political ideology (ranging from 0 = *left*, to 10 = *right*), and religious denomination (dummy-coded for each religious denomination, 0 = *none*).

Gay rights recognition (Level 2). For each country, an aggregate score was calculated based on a range of laws regarding homosexuality (e.g., anti-discrimination laws, same-sex marriage, bans on homosexuality) based on the 2012 State-Sponsored Homophobia report (Itaborahay, 2012); possible scores ranged from -3 (no legal rights for gays and a death penalty for homosexuality) to +8 (anti-discrimination bans and hate crime laws, legalized gay marriage, and full adoption rights), actual range = 0 to +8. See Supplemental Table 2 for calculation of each country's gay rights recognition score.

Results. At Level 1, greater religious attendance was uniquely associated with less support for gay freedoms, b = -.12, 95% CI [-.14, -.10], $t(25)$ = -12.05, $p < .001$, see Table 6. At Level 2, higher gay rights recognition was associated with more support for

Table 6: Relation between individual-level religious attendance, country-level gay rights recognition, and support for gay freedoms (European Social Survey, Wave 6, 2012), Study 5.

Outcome	Support for Gay Freedoms	
	Model 1 (no covariates)	Model 2 (with covariates)
	b (SE)	*b (SE)*
Intercept	3.70 (.08)***	3.85 (.09)***
Individual level		
Conservative Political Ideology		-.03 (.007)***
Age		-.01 (.001)***
Gender (male)		-.23 (.02)***
Education level		.08 (.007)***
Religious Denomination (none vs.)		
Catholic		-.02 (.02)
Protestant		-.07 (.03)**
Orthodox Christian		-.26 (.08)***
Other Christian		-.09 (.11)
Jewish		1.00 (.15)***
Muslim		-.88 (.14)***
Other religion		-.04 (.06)
Religious Attendance	**-.15 (.01)*** **	**-.12 (.01)*** **
Country level		
Gay Rights Recognition	.19 (.03)***	.18 (.04)***
Slope of Religious Attendance		
Gay Rights Recognition	**-.009 (.004)***	**-.004 (.004)**
Individual variance (residual)	1.14 (1.14)	1.14 (.99)
Intercept variance (residual)	.37645 (.18399)***	.37645 (.23138)***
Intercept ICC	.248	.248
Slope variance (residual)	.00322 (.00289)***	.00322 (.00267)***
Slope ICC	.002	.002

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. ICC = intraclass correlation coefficient. Unstandardized effects are presented.

gay freedoms, b = .18, 95% CI [.11, .25], t *(25)* = 5.17, p < .001, as expected. Contrary to predictions, the unique relation between religious attendance and support for gay freedoms did not vary as a function of Level 2 gay rights recognition, b = -.004, 95% CI [-.012, .004], $t(25)$ = -.85, p = .403. Note that before entering covariates, religious attendance was more strongly associated with less support for gay freedoms in countries higher in gay rights recognition, b = -.009, 95% CI [-.017, -.001], $t(25)$ = 2.18, p = .039; see Table 6, Model 1. However, this association is likely attributable to the covariates, and therefore I urge caution in interpreting this association.

Study 6: Pew Global Attitudes Project

Method. Data were analyzed from the Spring 2013 Pew Global Attitudes Project (Pew Research Center, 2013a, 2013b), a freely available, nationally representative dataset. Interviews were conducted face-to-face or by telephone. Data were analyzed for countries that included all variables of interest (for moral tolerance of homosexuality, N = 31 countries, 21,039 participants, for desired societal tolerance of homosexuality, N = 32 countries, 20,045 participants), see Appendix C, Supplemental Table 3 for information on countries examined. Religious attendance, age, and gay rights recognition were grand-mean centered. Gender was dummy-coded.

Measures.

Religious attendance (Level 1). Participants were asked, "Aside from weddings and funerals how often do you attend religious services?" Response options ranged from 0 = *never* to 6 = *more than once a week*.

Moral tolerance of homosexuality (Level 1). Participants were asked, "Do you personally believe that homosexuality is *morally acceptable* (re-coded as 1), *morally unacceptable* (re-coded as 0), or is it *not a moral issue* (re-coded as 1)?"

Desired societal tolerance of homosexuality (Level 1). Participants were asked, "And which one of these comes closer to your opinion?", *Homosexuality should not be accepted by society* = 0, *Homosexuality should be accepted by society* = 1.

Covariates (Level 1). The covariates were: gender (0 = *female*, 1 = *male*) and age in years.

Gay rights recognition (Level 2). Gay rights recognition was calculated based on the 2013 State-Sponsored Homophobia report conducted by the ILGA (Itaborahay & Zhu, 2013). For each country, an aggregate score was calculated based on a range of laws regarding homosexuality (e.g., anti-discrimination laws, same-sex marriage, bans on homosexuality), with possible scores ranging from -3 (indicating no legal rights for gays and a death penalty for homosexuality) to +8 (indicating anti-discrimination bans and hate crime laws, legalized gay marriage, and full adoption rights), actual range = -2.5 to +8. See Supplemental Table 3 for information on country ratings.

Results. At Level 1, greater religious attendance was uniquely associated with lower probability of moral tolerance of homosexuality (a dichotomous variable), b = -.18, 95% CI [-.09, -.26], $t(30)$ = -4.11, $p < .001$, odds ratio = .84, see Table 7. At Level 2, higher gay rights recognition was associated with greater probability of moral tolerance of homosexuality, b = .39, 95% CI [.19, .59], $t(30)$ = 3.81, $p < .001$, odds ratio = 1.48. As predicted, religious attendance was more strongly associated with lower probability of moral tolerance of homosexuality in countries higher in gay rights recognition, b = -.04,

Table 7: Relations between individual-level religious attendance, country-level gay rights recognition, and tolerance of homosexuality (Pew Spring 2013 Global Attitudes Project), Study 6.

Outcome	Moral tolerance of homosexuality		Desired Societal tolerance of homosexuality	
	Model 1 (no covs)	Model 2 (with covs)	Model 1 (no covs)	Model 2 (with covs)
	b (SE)	*b (SE)*	*b (SE)*	*b (SE)*
Intercept	-.48 (.19)*	-.49 (.22)*	-.53 (.21)*	-.55 (.24)*
Individual level				
Age		-.02 (.00)***		-.02 (.00)***
Gender (male)		-.26 (.09)**		-.29 (.08)***
Religious Attendance	**-.20 (.04)*** **	**-.18 (.04)*** **	**-.20 (.04)*** **	**-.19 (.04)*** **
Country level				
Gay Rights Recognition	.35 (.08)***	.39 (.10)***	.41 (.10)***	.45 (.12)***
Slope of Religious Attendance				
Gay Rights Recognition	**-.04 (.02)***	**-.04 (.02)†**	**-.02 (.02)**	**-.02 (.02)**
Intercept variance (residual)	1.13***	1.13 (1.37293)***	1.43***	1.43 (1.70989)***
Slope variance (residual)	.04122***	.04122 (.03979)***	.03819	.03819 (.03585)***

Note. † $p = .051$ * $p < .05$, ** $p < .01$, *** $p < .001$. covs = covariates. Unstandardized effects are presented.

95% CI [-.001, -.074], *t(30)* = -2.03, $p = .051$, odds ratio = .96, see Figure 2 for simple slopes. At high gay rights recognition, religious attendance was more strongly associated with a lower probability of moral tolerance of homosexuality, $b = -.28$, 95% CI [-.40, -.17], $p < .001$, odds ratio = .75. In contrast, religious attendance was not significantly associated with moral tolerance of homosexuality at low gay rights recognition, $b = -.08$, 95% CI [-.22, .06], $p = .216$, odds ratio = .92.

At Level 1, greater religious attendance was also uniquely associated with lower probability of desiring societal tolerance of homosexuality (a dichotomous variable), $b = -.19$, 95% CI [-.10, -.27], $t(30) = -4.44$, $p < .001$, odds ratio = .83. At Level 2, higher gay rights recognition was associated with greater probability of desiring societal tolerance of

homosexuality, b = .45, 95% CI [.21, .70], $t(30)$ = 3.69, p < .001, odds ratio = 1.55. Unlike the pattern for moral tolerance of homosexuals, the unique relation between religious attendance and desiring societal tolerance of homosexuality did not vary as a function of Level 2 gay rights recognition, b = -.02, 95% CI [-.05, .01], $t(30)$ = -1.30, p = .205, odds ratio = .98.

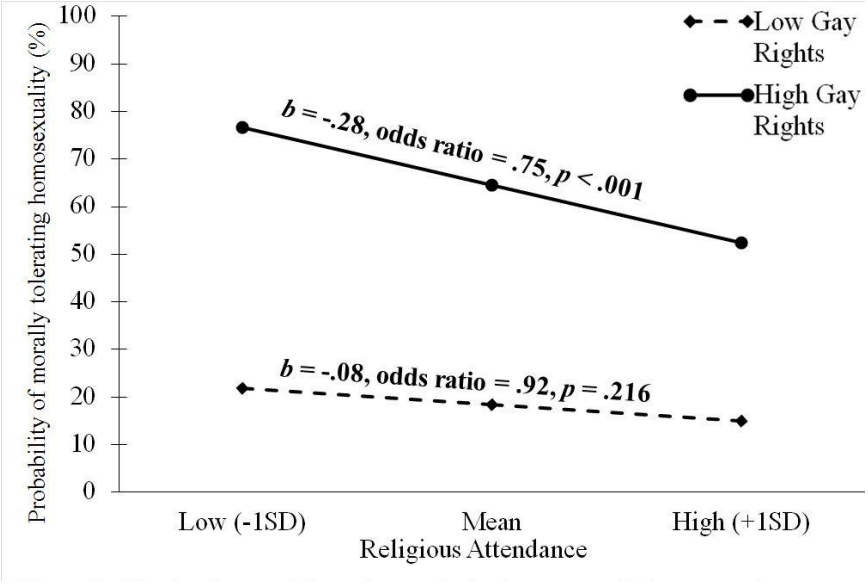

Figure 2: Simple slopes of the unique relation between religious attendance and moral tolerance of homosexuality at low (μ-1SD) and high (μ+1SD) gay rights recognition at the country-level, Pew Global Attitudes Project, 2013, Study 6.

Study 7: World Values Study

Method. Data were analyzed from Wave 6 (collected from 2010-2014) of the World Values Survey (WVS, 2014, n.d.), a freely available, nationally representative dataset. Most responses were collected through face-to-face interviews in the predominant language, with telephone interviews used for remote areas. Data were analyzed for countries that included all variables of interest (for opposing a homosexual neighbor, N = 51 countries, 79,984 participants; and for moral tolerance of homosexuality, N = 52 countries, 79,982 participants), see Appendix D, Supplemental Table 4, for information on countries examined. Religious attendance, all continuous

covariates, and gay rights recognition were grand-mean centered. All dichotomous covariates were dummy-coded.

Measures.

Religious attendance (Level 1). Participants were asked, "Apart from weddings, funerals and christenings, about how often do you attend religious services these days?", with response options ranging from 1 = *never or practically never* to 7 = *more than once a week*.

Opposing a homosexual Neighbor (Level 1). Participants were given a list of social groups and asked to indicate groups they would not like to have as a neighbor, 0 = *homosexuals not mentioned*, 1 = *homosexuals mentioned*.

Moral tolerance of homosexuality (Level 1). Participants were asked how morally justifiable homosexuality is, with response options ranging from 1 = *never justifiable* to 10 = *always justifiable*.

Covariates (Level 1). The covariates were: political ideology (ranging from *left* = 1, to *right* = 10), age, sex (0 = *male*, 1 = *female*), education level (highest education level attained, ranging from 1 = *no formal education* to 9 = *university-level education, with degree*), subjective SES (self-ranking of household income, ranging from 1 = *lowest group* to 10 = *highest group*), religious fundamentalism (average of the two items "Whenever science and religion conflict, religion is always right" and "The only acceptable religion is my religion", $r = .55$, ranging from 1 = *strongly disagree* to 4 = *strongly agree* for each item), and religious denomination (dummy-coded for each denomination, with 0 representing *no religious denomination*). For the religious denomination measure, in addition to a list of 7 major world religions that were

standardized for use in all countries, alternative coding systems were used in several countries to account for country-specific denominations. I categorized country-specific denominations into 5 additional categories (including "other"). Thus, the religious denomination variable consists of the original 7 denominations from the standardized list, 5 additional groups of similar denominations, and a no religious denomination category (see Table 8).

Gay rights recognition (Level 2). Data were collected in different years (2010-14) for different countries. To account for possible legal changes within countries during that time span, the ILGA rating for each country was calculated based on the year of data collection for each country (see Bruce-Jones & Itaborahay, 2011; Itaborahay, 2012; Itaborahay & Zhu, 2013, 2014; Ottoson, 2010). For each country, an aggregate score was calculated based on a range of laws regarding homosexuality (e.g., anti-discrimination laws, same-sex marriage, bans on homosexuality), with possible scores ranging from -3 (no legal rights for gays and a death penalty for homosexuality) to +8 (anti-discrimination bans and hate crime laws, legalized gay marriage, and full adoption rights); actual values ranged from -3 to +8. See Supplemental Table 4 for information on the country ratings.

Results. At Level 1, greater religious attendance was uniquely associated with a greater probability of opposing a homosexual neighbor (a dichotomous variable), $b = .03$, 95% CI [.001, .052], $t(49) = 2.04$, $p = .047$, odds ratio = 1.03, see Table 8. At Level 2, higher gay rights recognition was associated with a lower probability of opposing a homosexual neighbor, $b = -.31$, 95% CI [-.22, -.41], $t(49) = -6.53$, $p < .001$, odds ratio = .73. In keeping with H4, religious attendance was more strongly associated with a greater

Table 8: Relations between individual-level religious attendance, country-level gay rights recognition, and anti-gay bias (World Values Survey, Wave 6, 2010-14), Study 7.

Outcome	Oppose homosexual neighbor		Moral tolerance of homosexuality	
	Model 1 (no covs)	Model 2 (with covs)	Model 1 (no covs)	Model 2 (with covs)
	b (SE)	*b (SE)*	*b (SE)*	*b (SE)*
Intercept	-.12 (.13)	.19 (.14)	3.34 (.16)***	3.12 (.17)***
Individual level				
Conservative Political Ideo.		.00 (.00)		-.03 (.00)***
Age		.01 (.00)***		-.02 (.00)***
Sex (female)		-.28 (.02)***		.43 (.02)***
Education level		-.05 (.01)***		.11 (.01)***
Subjective SES		.04 (.01)***		-.12 (.01)***
Religious fundamentalism		.30 (.02)***		-.43 (.02)***
Religious denom (none *vs*.)				
Buddhist		.40 (.08)***		-.46 (.08)***
Catholic		.04 (.05)		-.13 (.04)**
Protestant		.28 (.05)***		-.56 (.05)***
Orthodox Christian		.22 (.06)***		-.38 (.06)***
Evangelical Christian		.11 (.09)		-.56 (.09)***
Zionist Christian		.34 (.13)**		-.38 (.15)**
Hindu		.12 (.10)		-.84 (.12)***
Jewish		.34 (.14)*		.16 (.15)
Shia Muslim		-.56 (.51)		-1.02 (.56)†
Sunni Muslim		.00 (.33)		-.86 (.33)**
Muslim (not specified)		.37 (.06)***		-.60 (.06)***
Other religion		.42 (.08)***		-.66 (.08)***
Religious attendance	**.06 (.01)*****	**.03 (.01)***	**-.12 (.02)*****	**-.05 (.02)****
Country level				
Gay Rights Recognition	-.31 (.05)***	-.31 (.05)***	.46 (.06)***	.41 (.06)***
Slope of religious attendance				
Gay Rights Recognition	**.01 (.00)****	**.01 (.00)****	**-.03 (.01)*****	**-.03 (.01)*****
Individual variance (residual)	N/A	N/A	5.96	5.96 (5.78)
Intercept variance (residual)	1.71885 (.96791)***	1.71885 (.89290)***	2.98445 (1.41310)***	2.98445 (1.32872)***
Intercept ICC	N/A	N/A	.333	.333
Slope variance (residual)	.00614 (.00508)***	.00614 (.00688)***	.02093 (.01299)***	.02093 (.01108)***
Slope ICC	N/A	N/A	.002	.002

Note. Unstandardized effects are presented. Covs = covariates. Ideo = ideology. Denom = denomination. ICC = intraclass correlation coefficient. Oppose homosexual neighbor is a dichotomous variable, and therefore individual variance and ICCs are not applicable. † $p < .10$ * $p < .05$, ** $p < .01$, *** $p < .001$.

probability of opposing a homosexual neighbor in countries higher in gay rights recognition, b = .01, 95% CI [.005, .023], $t(49)$ = 2.92, p = .005, odds ratio = 1.01, see Figure 3 for simple slopes. At high gay rights recognition, religious attendance was more strongly associated with a greater probability of opposing a homosexual neighbor, b = .07, 95% CI [.03, .10], $t(49)$ = 3.52, p < .001, odds ratio = 1.07. In contrast, religious attendance was not significantly associated with the probability of opposing a homosexual neighbor at low gay rights recognition, b = -.01, 95% CI [-.05, .02], $t(49)$ = -.61, p = .543, odds ratio = .99.

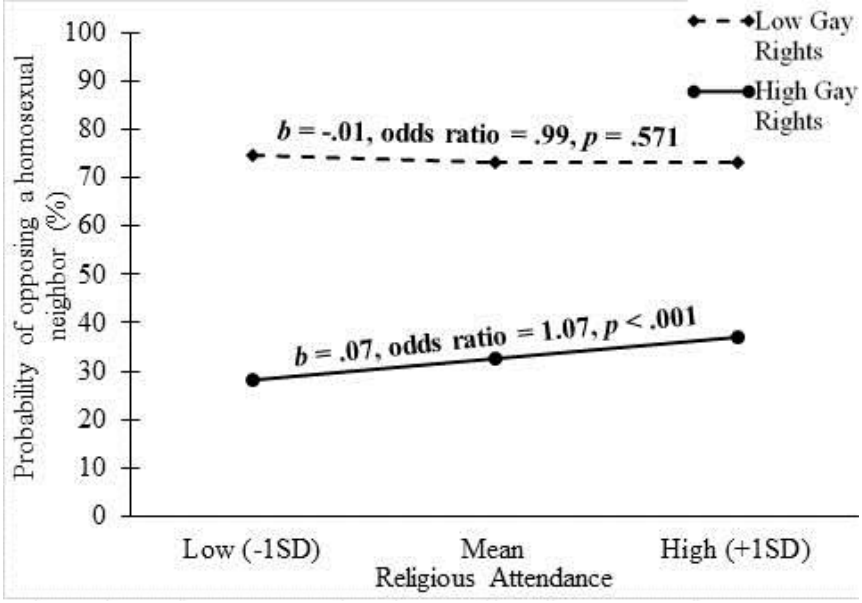

Figure 3: Simple slopes of the unique relation between religious attendance and opposing a homosexual neighbor at low (μ-1SD) and high (μ+1SD) gay rights recognition at the country-level, World Values Survey, Wave 6, Study 7.

At Level 1, greater religious attendance was also uniquely associated with less moral tolerance of homosexuality, b = -.05, 95% CI [-.08, -.02], $t(50)$ = -3.33, p = .002, see Table 8. At Level 2, higher gay rights recognition was associated with more moral tolerance of homosexuality, b = .41, 95% CI [.29, .52], $t(50)$ = 6.98, p < .001. As predicted, religious attendance was more strongly associated with less moral tolerance of

homosexuality in countries higher in gay rights recognition, b = -.03, 95% CI [-.04, -.01], $t(50)$ = -4.61, p < .001, see Figure 4 for simple slopes. At high gay rights recognition, religious attendance was more strongly associated with less moral tolerance of homosexuality, b = -.13, 95% CI [-.17, -.08], t(50) = -5.75, p < .001. In contrast, religious attendance was not significantly associated with moral tolerance of homosexuality at low gay rights recognition, b = .02, 95% CI [-.02, .06], t(50) = .81, p = .421.

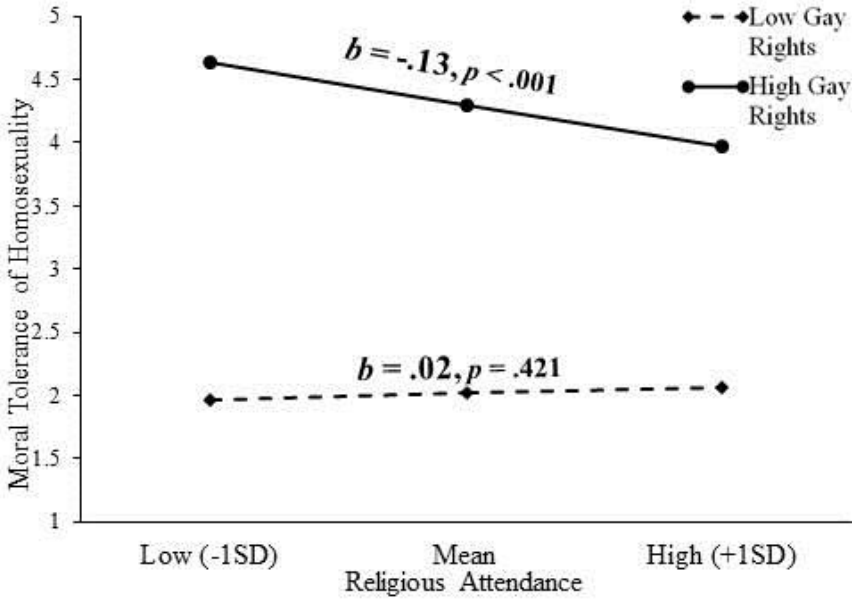

Figure 4: Simple slopes of the unique relation between religious attendance and moral tolerance of homosexuality at low (μ-1SD) and high (μ+1SD) gay rights recognition at the country-level, World Values Survey, Wave 6, Study 7.

Part 2 Discussion

Building on meta-analytic evidence (Whitley, 2009), individual differences in religious attendance was consistently associated with all forms of anti-gay bias in the United States (Part 1) and at the mean level of gay rights recognition in international data (Part 2), consistent with H1. Further, the link between religious attendance and anti-gay bias was significant over and above theoretically relevant covariates (e.g., religious

fundamentalism, political ideology, religious denomination), consistent with H2. On average (i.e., comparing nation-level means), there was notably lower bias in countries higher in gay rights recognition, reflecting tolerant social norms that condemn blatant anti-gay bias, consistent with H3.

Critically, consistent with H4, I also found evidence that personal religious attendance is more strongly associated with anti-gay bias in countries higher in gay rights recognition rather than lower in gay rights recognition. Indeed, I found evidence of four cross-level interactions that demonstrate robust associations between religious attendance and anti-gay bias in countries with high (μ+1*SD*) gay rights recognition, but weak (and non-significant) relations in countries with low (μ-1*SD*) gay rights recognition (see Figures 1 through 4). These findings are consistent with theories of ingroup social norms (Abrams et al., 1990; Goldstein et al., 2008) and theorizing that there is religious resistance against growing gay rights recognition (Browne & Nash, 2014; Herek & McLemore, 2013).

Of note, there was relatively strong evidence for resistance against gay rights issues (e.g., adopting children) and moral acceptance of homosexuality, issues particularly linked to culture war rhetoric (i.e., maintaining the freedom to express traditional religious beliefs that oppose homosexual behavior, gay adoption, and gay marriage). These domains are presumably most relevant to local moral norms of one's religious community. Moral and legal acceptance may be considered a "social change" that challenges a stable, traditional status quo, a threat to traditional religious convictions (Jost et al., 2014).

In contrast, there was weak (non-significant) evidence that relations between religious attendance and opposition to *society* tolerating gays (i.e., gays living as they wish and being tolerated by society) differed as a function of Level 2 (nation) gay rights recognition, in that one cross-level interaction was non-significant, and another was not unique from covariates. For instance, both the EVS and ESS include European countries (many of which overlapped between the two datasets), and these analyses also included very similar covariates (see Tables 5 and 6), yet there was a cross-level interaction over and above covariates in the EVS (with gay adoption support as the outcome), but the cross-level interaction was not unique from covariates in the ESS (with support for gay freedoms as the outcome). One possibility is that there may be less religious resistance against secular society tolerating gays, as it may still be possible for religious communities to maintain their distinct religious norms despite cultural shifts in broader (i.e., secular) society. That is, religious attenders may push back more against moral and legal changes that can affect their personal lives than against what other members of society personally think about homosexuality.

Part 3: Religious Justification

The findings of Studies 1 through 7 are largely consistent with greater religious attendance being related to greater anti-gay bias, particularly in more tolerant social contexts (i.e., countries with higher gay rights recognition). That is, I have found support for the first four hypotheses, consistent with religion facilitating the justification of anti-gay bias (following the JSM; Crandall & Eshleman, 2003). However, it is presently not clear *why* this association occurs. Therefore, in Studies 8 through 10 I examine *religious justification* for expressing anti-gay bias.

One commonly used religious justification for anti-gay bias in the United States is the phrase "I love the sinner [i.e., gay people], but hate the sin [i.e., homosexuality]". This phrase may be used to legitimize one's anti-gay views as a moral stance rather than an expression of prejudice (Altemeyer, 2003). The phrase gives the impression of tolerance and even positivity (i.e., loving the sinner). However, it also communicates that gays and lesbians are morally inferior "sinners" whose sinful attractions and behaviors should be hated.

In general, the link between religiosity and intergroup bias can be complex because some facets of religiosity may promote tolerance (e.g., loving one's neighbors), whereas other facets of religiosity may promote and justify bias (e.g., moral condemnation; Crandall & Eshleman, 2003; Hunsberger & Jackson, 2005). This conflict was demonstrated when Pope Francis, the current leader of the Catholic Church, provoked controversy by stating that it was not his place to judge gays who wanted a relationship with God (suggesting *tolerance* of gays). However, the Vatican quickly clarified that homosexuality is still considered a grave sin and that gay marriages are against church doctrine (suggesting moral and political *intolerance* of gays) (CBC, 2013). Although it is not clear whether apparently conflicted love-hate attitudes would lead to more or less bias, recent findings suggest that reporting feeling "torn" or "conflicted" in one's attitudes toward gays is consistently associated with greater *anti-gay* bias and not neutrality (Hoffarth & Hodson, 2014). This suggests that such religious justification may be a mechanism for promoting anti-gay bias.

Importantly, this downplaying of anti-gay bias bears similarities to other psychological mechanisms for expressing socially undesirable biases. For instance,

benevolent sexism (i.e., putting idealized women on a pedestal) promotes sexism and discrimination against women (e.g., Glick & Fiske, 1996), and trivializing prejudicial humor as "just a joke" facilitates prejudice toward the target of the joke (e.g., Hodson et al., 2010). Likewise, loving the sinner but hating the sin appears neutral or even benevolent at face value. Furthermore, this phrase is overtly religious, calling to mind biblical commands to love one's neighbor. Thus, sinner-sin beliefs are a strong candidate for a belief that could be endorsed among those who are members of religious communities that condemn homosexuality, while simultaneously living in countries that condemn anti-gay bigotry. Preliminary evidence supports the proposition that this belief may facilitate the expression of anti-gay bias. As noted by Altemeyer (2003, p. 20, Footnote 3):

> I wondered if the "hate sin, love the sinner" responses of persons scoring in the top quartile of the Religious Fundamentalism scale would be reflected in their attitudes toward homosexuals. They were not. Most "High Fundamentalists" agreed—strongly in fact—that one should hate sin but love the sinner. But they nearly proved significantly *more rejecting* of homosexuals (*M* of 51.8) than did the few High Fundamentalists who disagreed with hating sin but loving the sinner (*M* of 37.7; $t = 1.70$, $p < .10$). And, of course, they rejected homosexuals much more than the other three quarters of the sample. They may believe in loving the sinner, but they also believe much more that homosexuals should be discriminated against and even thrown into jail.

The JSM proposes that socially undesirable prejudices are expressed *when* one can draw on justifications for the prejudice (Crandall & Eshleman, 2003). For instance,

greater prejudice tends to be expressed more when there is situational ambiguity, such as when a job application from a Black person has mixed qualifications (Hodson, Dovidio, & Gaertner, 2002), when anti-gay bullying is portrayed as "just boys being boys" (Hoffarth & Hodson, 2014), and when sexist statements are portrayed as humorous (Ford, 2000; Ford, Boxer, Armstrong, & Edel, 2007). Within the context of this thesis, there is likely variability in personal familiarity with the phrase "I love the sinner, hate the sin." That is, some frequent religious attenders may have personally been exposed to the "sinner-sin beliefs" frequently and are thus particularly familiar with this religious justification. I might expect particularly high levels of anti-gay bias among these individuals, given that they would be able to draw on these "sinner-sin beliefs" to justify expressing anti-gay bias. In contrast, others may be less personally familiar with these justifications (e.g., if their religious community does not discuss homosexuality), and consequently there may be relatively lower bias among those who frequently attend religious services, but are not familiar with the phrase "I love the sinner, but hate the sin."

In Part 3, I examine the potential for these "sinner-sin beliefs" to play a role in the expression of anti-gay bias in contexts where there is higher recognition of gay rights. Researchers have argued that political rhetoric such as these "sin-sinner belief" appears to emerge in contexts with more emphasis on gay rights (Browne & Nash, 2014). However, to date there is no direct evidence that sinner-sin beliefs are linked to gay rights. "I love the sinner, but hate the sin" as a religious justification for opposing gay rights appears to be an explicit attitude, within one's conscious awareness, and thus I would expect that when gay rights are particularly salient, "I love the sinner, but hate the sin" beliefs should also be particularly salient. Therefore, in Study 8 I examine Google searches in the

United States using Google Trends. I hypothesized that higher US search volumes for "love the sinner hate the sin" would coincide with higher search volumes for "gay rights" and "gay marriage" (H5). Next, I examine the role of sinner-sin beliefs as a potential mediator of the relation between religious attendance and anti-gay bias in two countries with relatively high gay rights recognition, the United States (Study 9) and Canada (Study 10). I hypothesized that personal endorsement of sinner-sin beliefs would mediate the relation between religious attendance and anti-gay bias (H6). I predicted that religious attendance would be more strongly associated with anti-gay bias among those who were more familiar with the phrase "I love the sinner, but hate the sin" (H7). Further, I predicted that there would be mediation of the moderated effect, such that the interaction would be accounted for by greater personal endorsement of sinner-sin beliefs (H8).

Study 8: Google Trends

Method. Google is the most frequently used search engine in the United States, with approximately 64% market share (comScore, 2016). Relative volumes of Google searches for specific search terms can be accessed through the Google Trends website (see Google, 2016a). Google Trends data have been used in the psychological literature to examine phenomena such as state-level variability in searches for pornography (MacInnis & Hodson, 2015) and the correspondence between suicide-related searches and suicidal behavior (Ma-Kellams, Or, Baek, & Kawachi, 2016). Weekly volumes for each search term are based on the percentage of all Google Searches conducted during the specified time period, within the specified region. A standardized variable is created with a potential range of 0 to 100 for each Google search term. A value of 100 indicates the time period or region with the highest proportion of all searches on Google as

compared to all other time periods or time frames (see Google, 2016b). For example, 100 is the value assigned to the week with the highest volume of Google searches for "love the sinner hate the sin", and a week with a value of 10 had a search volume 10% as high as the maximum weekly value.

In Study 8, I analyzed Google Trends for the phrase "love the sinner hate the sin"[7] to determine whether higher volumes of Google searches for this phrase coincided with higher volumes of searches related to gay rights. Analyses were restricted to the United States and covered all weeks spanning from the week beginning January 4th, 2004 (the earliest available data) through the week beginning June 19th, 2016, a total of 651 weeks.

For the primary analyses, I examined correlations among volumes of Google searches for "love the sinner hate the sin," "gay rights," and "gay marriage." There are several potential confounds I also took into account as covariates. For instance, there may be time periods when there is more social focus on intergroup issues generally, and I therefore included volumes of Google searches for "animal rights," "women's rights," and "immigration" as covariates. In addition, there may be time periods when there is more social focus on sexual morality generally, and I therefore included volumes of Google searches for "abortion," "pornography," and "divorce" as covariates. In addition, there may be time periods when there is more focus on political topics generally (e.g., during biennial US election cycles), and I therefore included volumes of Google searches for political topics that are not necessarily discussed as intergroup issues: "climate change," "unemployment," and "US deficit" as covariates. To statistically control for

[7] I also conducted separate Google Trends searches for "love the sinner" and "hate the sin". A higher volume of Google searches for "love the sinner hate the sin" strongly coincided with a higher volume of Google searches for "love the sinner" (r = .62), and "hate the sin" (r = .65). Further, results were nearly identical, regardless of whether "love the sinner hate the sin", "love the sinner", or "hate the sin" was used in the analyses. Therefore, all analyses utilize the entire search term "love the sinner hate the sin".

these potential confounds, I calculated partial correlations for "love the sinner hate the sin" with both "gay rights" and "gay marriage", statistically controlling for all covariates.

Results. I first examined the relative proportion of Google searches for "love the sinner hate the sin,", "gay rights," and "gay marriage" over the available time period. Bias-corrected bootstrapped confidence intervals with 1,000 iterations were utilized for all correlations. Google searches for "love the sinner, hate the sin" spiked to its highest relative search volume during June 2015, the month that the United States Supreme Court legalized same-sex marriage across the United States (Supreme Court of the United States, 2015), see Figure 5. In addition, by observing Figure 5, one can see that high search volumes for "love the sinner hate the sin" coincide with other time periods when there was high media attention on gay rights, such as November 2004 (when 11 states voted to ban same-sex marriage), March 2013 (when bans on same-sex marriage were first challenged in the Supreme Court), December 2013 (when the Don't Ask, Don't Tell ban on gays and lesbians openly serving in the military was repealed), and June 2016 (when 49 people were murdered at an LGBT nightclub in Orlando), see Figure 5. Indeed, many of the highest volumes of searches for "love the sinner hate the sin" also coincide with higher volumes of searches for "gay rights" and "gay marriage". These findings are consistent with the notion that these religious justifications may be, in part, a reaction to greater cultural attention to gay rights.

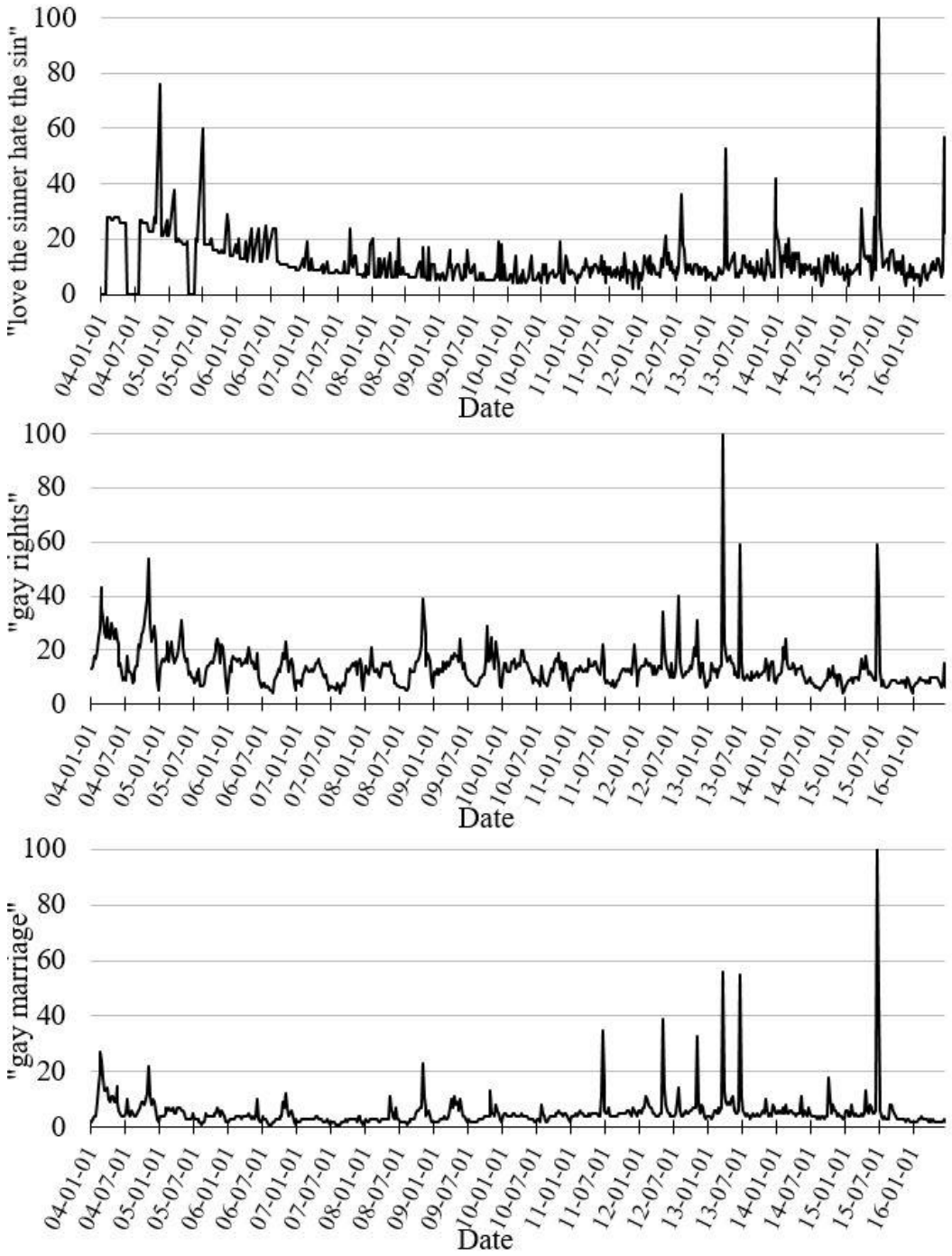

Figure 5: Relative weekly volume of Google searches for the phrases “love the sinner hate the sin,” “gay rights,” and “gay marriage”, January 4, 2004 to June 25, 2016 (Study 8).

Next, I examined whether relative proportions of Google searches for "love the sinner hate the sin" coincided with relative proportions of Google searches for "gay rights" and "gay marriage", see Table 9. Consistent with Hypothesis 5, a higher search volume for "love the sinner hate the sin" was associated with a higher search volume for "gay rights" (r = .45, 95% CI [.31, .56], p <.001) and "gay marriage" (r = .42, 95% CI [.24, .57], p < .001). Partial correlations were then calculated, controlling for theoretically relevant covariates (see Study 8 Method section). Although search volumes for "love the sinner hate the sin", "gay rights" and "gay marriage" coincided with other searches (see Table 9), inclusion of the covariates did not substantially impact the results. A higher search volume for "love the sinner hate the sin" was associated with a higher search volume for "gay rights" (rp = .45, 95% CI [.27, .58], p < .001) and "gay marriage" (rp = .43, 95% CI [.21, .59], p < .001), independently of the covariates.[8]

[8] Several of the distributions for relative proportions of Google searches were positively skewed and leptokurtic (i.e., skew and kurtosis values greater than 2), which can be attributed to spikes in the data associated with historical events (as shown in Figure 5). Therefore, I also ran the analyses using a Log10 transformation for "love the sinner hate the sin", "gay rights", "gay marriage", "immigration", "pornography", and "divorce". Raw values for covariates that were approximately normally distributed were maintained. Results were comparable to results obtained with the raw data. A higher Log10-transformed search volume for "love the sinner hate the sin" was associated with a higher Log10-transformed search volume for "gay rights" (r = .21, 95% CI [.11, .31], p < .001) and "gay marriage" (r = .23, 95% CI [.13, .32], p < .001). Partial correlations, controlling for covariates, indicate a higher Log10-transformed search volume for "love the sinner hate the sin" was associated with a higher Log10-transformed search volume for "gay rights" (rp = .23, 95% CI [.11, .35], p < .001) and "gay marriage" (rp = .22, 95% CI [.11, .33], p < .001), independently of covariates.

Table 9: Bivariate correlations among weekly relative proportions of Google searches in the United States, Study 8.

	1 ^{LG}.	2 ^{LG}.	3 ^{LG}.	4.	5.	6 ^{LG}.	7.	8 ^{LG}.	9 ^{LG}.	10.	11.	12.
1 ^{LG}. love the sinner hate the sin	*.83*$^{\#}$	**.45**$^{\#}$	**.42**$^{\#}$	**.30**$^{\#}$	**.24**$^{\#}$	**.21**$^{\#}$	**.28**$^{\#}$	**.30**$^{\#}$	**-.09***	**-.21**$^{\#}$	**-.32**$^{\#}$	**.15**$^{\#}$
2 ^{LG}. gay rights	.21$^{\#}$	*.91*$^{\#}$	**.75**$^{\#}$	**.51**$^{\#}$	**.53**$^{\#}$	**.30**$^{\#}$	**.62**$^{\#}$	**.25**$^{\#}$	**.02**	**-.01**	**-.03**	**.38**$^{\#}$
3$^{\mathrm{LG}}$. gay marriage	.23$^{\#}$	.74$^{\#}$	*.81*$^{\#}$	**.10***	**.14**$^{\wedge}$	**.01**	**.22**$^{\#}$	**.14**$^{\#}$	**.06**	**.00**	**.01**	**.13**$^{\wedge}$
4. animal rights	.15$^{\#}$	.61$^{\#}$	.23$^{\#}$	-	**.87**$^{\#}$	**.68**$^{\#}$	**.79**$^{\#}$	**.59**$^{\#}$	**-.17**$^{\#}$	**-.17**$^{\#}$	**-.36**$^{\#}$	**.49**$^{\#}$
5. women's rights	.16$^{\#}$	.66$^{\#}$	.31$^{\#}$	.87$^{\#}$	-	**.66**$^{\#}$	**.78**$^{\#}$	**.49**$^{\#}$	**-.19**$^{\#}$	**.04**	**-.37**$^{\#}$	**.46**$^{\#}$
6 ^{LG}. immigration	.13$^{\wedge}$	.40$^{\#}$	.04	.75$^{\#}$	.70$^{\#}$	*.96*$^{\#}$	**.52**$^{\#}$	**.47**$^{\#}$	**-.21**$^{\#}$	**-.13**$^{\wedge}$	**-.47**$^{\#}$	**.26**$^{\#}$
7. abortion	.19$^{\#}$	.70$^{\#}$	.41$^{\#}$	.79$^{\#}$	.78$^{\#}$	.56$^{\#}$	-	**.42**$^{\#}$	**-.04**	**-.12**$^{\wedge}$	**-.22**$^{\#}$	**.56**$^{\#}$
8 ^{LG}. pornography	.18$^{\#}$	.27$^{\#}$	.11$^{\#}$	.68$^{\#}$	.57$^{\#}$	.63$^{\#}$	.47$^{\#}$	*.95*$^{\#}$	**-.14**$^{\#}$	**-.30**$^{\#}$	**-.46**$^{\#}$	**.21**$^{\#}$
9 ^{LG}. divorce	-.11$^{\wedge}$	.06	.18$^{\#}$	-.19$^{\#}$	-.24$^{\#}$	-.28$^{\#}$	-.05	-.24$^{\#}$	*.94*$^{\#}$	**-.11**$^{\wedge}$	**.38**$^{\#}$	**-.01**
10. climate change	-.11$^{\wedge}$	.03	.02	-.17$^{\#}$	.04	-.11$^{\wedge}$	-.12$^{\wedge}$	-.32$^{\#}$	-.16$^{\#}$	-	**.14**$^{\#}$	**-.05**
11. unemployment	-.26$^{\#}$	.02	.09*	-.36$^{\#}$	-.37$^{\#}$	-.50$^{\#}$	-.22$^{\#}$	-.58$^{\#}$	.48$^{\#}$	.14$^{\#}$	-	**.06**
12. US deficit	.05	.45$^{\#}$	.28$^{\#}$	.49$^{\#}$	.46$^{\#}$	.29$^{\#}$	.56$^{\#}$	.21$^{\#}$	.00	-.05	.06	-

Note. N = 651 weeks, spanning January 4th, 2004, to June 25th, 2016. Correlations for raw proportions are above the diagonal and in bold. Correlations for Log10 transformed variables are below the diagonal. ^{LG} Indicates this variable was Log10 transformed for analyses presented below the diagonal. Correlations between raw and Log10 transformed variables are presented on the diagonal in italics, when applicable. * $p < .05$ $^{\wedge}$ $p < .01$ $^{\#}$ $p < .001$

Study 8 Discussion. Overall, Hypothesis 5 was strongly supported: the religious justification "love the sinner hate the sin" coincides with greater social emphasis on gay rights. Relatively higher volumes of Google searches for "love the sinner hate the sin" coincided with major US gay rights events (e.g., the US Supreme Court ruling on gay marriage). In addition, higher volumes of Google searches for "love the sinner hate the sin" coincide with higher volumes of Google searches for both "gay rights" and "gay marriage." These relations hold after statistically controlling for potential confounds (i.e., other intergroup rights issues, sexual morality issues, and political issues), as well as after correcting for non-normal distributions.

These results indicate that interest in "love the sinner, hate the sin" beliefs coincided with interest in gay rights on a societal level. It is important to note that these results do not imply that the same *people* who Googled "love the sinner hate the sin" also Googled "gay rights" or "gay marriage". All data are aggregated across the entire population of US Google users and should not be interpreted as reflecting individual psychological states. In Studies 9 and 10, I examine the relation between sinner-sin beliefs and anti-gay bias at an individual psychological level.

Study 9: Religious Justification as a Mediator

Observational evidence indicates that religious justifications for anti-gay bias are used in political discourse (Browne & Nash, 2014). In addition, analyses of Google Trends (see Study 8) indicate a correspondence between Google searches for "love the sinner hate the sin" and both "gay rights" and "gay marriage", suggesting that these "sinner-sin" beliefs may be more salient when there is more societal emphasis on gay rights. However, it is not presently clear whether religious attenders personally endorse

these beliefs, or whether personal endorsement accounts for religious attenders' expression of anti-gay bias. I constructed a 4-item scale of "sinner-sin beliefs". This scale is intended to capture contemporary forms of religious justification that are used in US social and political rhetoric that frame expressions of bias as religious convictions and therefore justified (e.g., "I love the sinner, but hate the sin"). These four items were developed to reflect a single construct (see the Results section for scale construction information).

Of course, there are other potential mediators of the link between religious attendance and anti-gay bias that warrant consideration. Intergroup affect often plays a crucial role in intergroup bias (Mackie & Hamilton, 1993). Group-based social norms among religious attenders may also lead to more negative affect (and therefore intergroup bias) in ways that are unrelated to religious justification. In addition, religious justification may overlap with these constructs. In particular, I examine intergroup affect in terms of empathy, trust, and anxiety toward gays.

Intergroup empathy (i.e., relating to the emotional experience of outgroup members) is associated with decreased intergroup bias (Batson & Ahmad, 2009; Batson, Fultz, & Schoenrade, 1987; Hodson, 2008). Gay empathy is also associated with lower anti-gay bias (e.g., Hodson, Choma, & Costello, 2009; Hoffarth & Hodson, 2014, 2016). Crandall and Eshleman (2003) argue that empathy suppresses prejudice by making discrimination, dislike, and other forms of harm toward an outgroup aversive. Thus, those who frequently attend religious services may not emotionally relate to gays because they view gays as moral "outsiders". This reduced empathy may be associated with greater anti-gay bias.

It is also possible that individuals with higher levels of religious attendance view gays as untrustworthy, particularly given that gays can be represented as moral "outsiders". Trust is formed when one believes another person can be relied on to behave in a moral manner and uphold their commitments (Brewer, 1999; see also Dovidio, Gaertner, Kawakami, & Hodson, 2002). Decreased trust is associated with increased intergroup bias, including anti-gay bias (e.g., Hoffarth & Hodson, 2016; Turner, Hewstone, & Voci, 2007). Members of religious groups may distrust religious outsiders whom they do not perceive as sharing their moral convictions, which may also lead to greater anti-gay bias.

Finally, intergroup anxiety may also mediate the relation between religious attendance and anti-gay bias. Intergroup anxiety arises when one feels uncomfortable or suspicious around members of another group. As such, gay anxiety is associated with greater anti-gay bias (e.g., Hoffarth & Hodson, 2016; West & Hewstone, 2012). The integrated threat theory of prejudice (Stephan & Stephan, 2000) argues that perceiving a group as a symbolic threat (i.e., threatening value systems) promotes intergroup bias in part by increasing anxiety. Moreover, Crandall and Eshleman (2003) argue that intergroup anxiety can be used to justify prejudice in that the feelings of anxiety one experiences around a group are attributed to negative traits about the outgroup. Frequent religious attenders may view gays and the gay rights movement as a threat to traditional morality, which may increase anxiety toward gays, leading to greater anti-gay bias. Importantly, religious attendance could potentially be more strongly associated with gay anxiety in contexts in which gay rights have become influential, as gays may be considered more politically powerful and therefore a larger symbolic threat.

I tested a mediation model in Study 9 to examine Hypothesis 6, that sinner-sin beliefs (i.e., a religious justification) mediate the link between religious attendance and greater anti-gay bias. Tests with all potential mediators were included simultaneously, allowing for isolation of a sinner-sin beliefs path independent of other well-established bias correlates. I predicted that religious attendance would be associated with greater sinner-sin beliefs (H6a), which, in turn, would be associated with greater anti-gay bias (H6b), and that there would be indirect effects of religious attendance through sinner-sin beliefs predicting anti-gay bias (H6c).

Method. Participants consisted of 397 heterosexual Americans[9] recruited through Amazon Mechanical Turk (i.e., Mturk), *M*age = 35.1 (*SD* = 11.7), 52.8% male, 80.9% White, 51.3% with 4 or more years of university education[10]. Mturk is a widely-used participant pool. Although not random samples, Mturk samples are more representative of the general population than university samples (Paolacci & Chandler, 2014). Mturk is generally recognized as a reliable source of data (Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010).

Measures.

Predictor.

Religious attendance. Participants indicated how frequently they attended religious services on a 9-point scale (ranging from 0 = *never*; to 8 = *several times a*

[9] Additional participants (n = 51) identified as a sexual minority, or did not indicate their sexual orientation, and were excluded from the analyses.

[10] Tests of indirect effects through each of four mediators on three outcome variables result in 12 indirect effects. When determining power, I assumed effect sizes of r = .21 for all a-paths and b-paths, the average effect size in social psychology (Richard, Bond, & Stokes-Zoota, 2003), given that sinner-sin beliefs is a novel construct. A Monte Carlo analysis in Mplus (following Muthén & Muthén, 2002) indicated that a sample of 415 would provide 98% power to detect each indirect effect and 80% power to detect all 12 indirect effects. I therefore aimed for an approximate sample size of 400. The present sample size of 397 provided approximately 97% power to detect each indirect effect, and 73% power to detect all 12 indirect effects simultaneously.

week), with higher scores reflecting more frequent religious attendance. This measure is identical to that in the General Social Survey.

Mediators.

Sinner-sin beliefs (see Appendix E, Measure A; 4-item, 7-point measure, α = .88). Participants responded to the following justifications for anti-gay prejudice: "When it comes to the topic of homosexuality, I love the sinner but hate the sin", "Believing that a gay person's sexual behavior is sinful does NOT make one homophobic", "I am bothered by homosexual behavior, not gay people", and "Considering gay sexual behavior sinful is usually homophobic" (reverse-coded). Higher scores reflect justifying anti-gay bias as opposition to homosexual behavior rather than opposition to the person, a contemporary religious justification for anti-gay bias. Response options ranged from *strongly disagree* (1) to *strongly agree* (7), with higher scores indicating greater sinner-sin beliefs.

Empathy for gays (see Appendix E, Measure B; 6-item, 7-point measure, α = .96). Participants indicated the extent to which participants relate to the emotions of gay people in terms of sympathy, compassion, softheartedness, warmness, tenderness, and feeling moved by gays (modified from Batson et al., 1987, following Hodson, Choma, et al., 2009). Higher scores indicate greater empathy for gays.

Trust of gays (see Appendix E, Measure C; 4-item, 7-point measure, α = .85). Participants indicated whether they viewed gays as trustworthy or untrustworthy (e.g., "Gays and lesbians are trustworthy", "When gays and lesbians come near me, I do not trust them most of the time"; Turner, Hewstone, & Voci, 2007). Higher scores indicate higher trust of gays.

Anxiety towards gays (see Appendix E, Measure D; 10-item, 7-point measure, α = .93). Participants indicated how socially uncomfortable they feel when working with gays (e.g., "When working with gay people, I would feel defensive", "When working with gay people, I would feel suspicious", Stephan & Stephan, 1985). Higher scores indicate higher anxiety towards gays.

Outcomes.

Thermometer ratings of gays. Participants indicated how much they like (*vs*. dislike) gays or lesbians on separate attitude thermometers on 0 (*extremely unfavorable attitude*) to 100 (*extremely favorable attitude*) scales. The two items were averaged (r = .94), with higher scores indicating more favorable attitudes toward gay people, following Hoffarth and Hodson (2016).

Gay rights support (see Appendix E, Measure E; 20-item, 7-point measure, α = .95). Participants indicated support for a variety of gay rights (e.g., "Gays and lesbians should be protected by hate-crime legislation", "Gays and lesbians should be allowed to marry"; Brown & Henriquez, 2011). Higher scores indicate greater gay rights support.

Attitudes toward lesbians and gays, short version (i.e., ATLG, see Appendix E, Measure F; 10-item, 7-point scales, α = .94). Participants indicated their attitude toward gays and lesbians, with higher scores indicating greater anti-gay bias (e.g., "Female homosexuality is a sin.", "Homosexual behavior between two men is just plain wrong"; Herek, 1988). The ATLG is a widely used measure of anti-gay prejudice, and largely reflects blatant moral condemnation (*vs*. tolerance) of homosexuality and gay people (Herek, 1984, 1988).

Results.

A principal components analysis of the four items composing the sinner-sin beliefs measure indicated one component (eigenvalue = 2.94, all other eigenvalues < .59) that accounted for 73.6% of the total variance among the items. In addition, a confirmatory factor analysis was tested with one factor representing the four items measuring sinner-sin beliefs. Although all items loaded on the latent factor at $\beta = .65$ or greater, model fit was relatively poor ($\chi^2(2) = 62.50$, $p < .001$, RMSEA = .041, CFI = .853). Residuals for two of the individual items (specifically, "Believing that a gay person's sexual behavior is sinful does NOT make one homophobic" and a reverse-coded version of the item, "Considering gay sexual behavior sinful is usually homophobic") were correlated. When this correlation was modelled, there was nearly perfect model fit ($\chi^2(1) = 1.67$, $p = .20$, RMSEA = .041, CFI = .998). Therefore, the residuals for these two individual items were allowed to intercorrelate in both Study 9 and Study 10, with sinner-sin beliefs treated as a single latent construct.

Bivariate Correlations.

All mediators were modeled as latent variables[11]. As with Studies 1 through 7, greater religious attendance was associated with lower gay rights support ($r = -.42$, 95% CI [-.52, -.32]), greater ATLG ($r = .49$, 95% CI [.40, .59]), and lower thermometer ratings of gays ($r = -.23$, 95% CI [-.34, -.12]), all ps < .001 (see Table 10). Consistent with H6a, greater religious attendance was associated with greater sinner-sin beliefs ($r = .55$, $p < .001$, 95% CI [.46, .65]). In addition, sinner-sin beliefs was associated with lower

[11] Sinner-sin beliefs and trust of gays were modelled as latent variables based on the four individual items in each scale. Empathy for gays and anxiety towards gays were modeled as latent variables based on 3 parcels for empathy for gays (with 2 items each) and 5 parcels for anxiety towards gays (with 2 items each). Parcels were composed of the two items with the most similar skewness and kurtosis values.

gay rights support (r = -.69, 95% CI [-.76, -.61]), greater ATLG (r = .76, 95% CI [.70, .83]), and lower thermometer ratings of gays (r = -.45, 95% CI [-.55, -.36]), all ps < .001, consistent with H6b. Although empathy for gays, trust of gays, and anxiety towards gays were associated with indicators of anti-gay bias in the expected direction, religious attendance was only modestly associated with lower trust of gays and greater anxiety towards gays, and was unrelated to empathy for gays (see Table 10).

Mediation model. Next, I tested sinner-sin beliefs as a potential mediator of the relation between religious attendance and anti-gay bias, using Mplus 7 statistical software (Muthén & Muthén, 1998-2012). Maximum likelihood estimation procedures with standard errors robust to non-normality (MLR) were used to estimate all model parameters. The mediators were latent variables and the structural model was saturated, meaning that all structural paths were estimated in the model (see Figure 6). As a result, fit indices were not particularly informative because they only gauged the fit of the measurement aspects of the model, so I relied on decomposition of the total effects of religious attendance into direct and indirect effects (Mackinnon et al., 2002). Religious attendance was modeled as the predictor variable, with sinner-sin beliefs as the primary mediator of interest. Empathy for gays, trust of gays, and anxiety towards gays were modeled simultaneously as potential alternative mediators. Gay rights support, ATLG, and thermometer ratings of gays were modeled as criteria variables. Residuals variances for all mediators were permitted to covary, as were residual variances for criteria. Indirect effects were tested from religious attendance to each of the criteria variables (i.e., gay rights support, ATLG, and thermometer ratings of gays) via each of the mediators (i.e., sinner sin beliefs, empathy for gays, trust of gays, and anxiety towards gays) using the

Table 10: Bivariate correlations between variables, US Mturk (Study 9).

	1.	2.	3.	4.	5.	6.	7.	*M*	*SD*
1. Religious attendance	-							2.85	2.47
2. Sinner-sin Beliefs	.55***	-						0	1
3. Empathy for Gays	-.08	-.29***	-					0	1
4. Trust of Gays	-.13*	-.33***	.65***	-				0	1
5. Anxiety towards Gays	.22***	.40***	-.46***	-.58***	-			0	1
6. Gay Rights Support	-.42***	-.69***	.56***	.62***	-.66***	-		5.77	1.39
7. ATLG	.49***	.76***	-.49***	-.52***	.60***	-.90***	-	2.43	1.61
8. Thermometer Ratings of Gays	-.23***	-.45***	.64***	.69***	-.57***	.69***	-.67***	67.14	26.58

Note. $N = 397$. Sinner-Sin Beliefs, Empathy for Gays, Trust of Gays, and Anxiety towards Gays are modelled as latent variables. ATLG = Attitudes toward Lesbians and Gay Men, short version.
* $p < .05$ *** $p < .001$.

biased-corrected bootstrap method with 1,000 resamples and the 95% bias-corrected confidence intervals (CIs). This method provides a more accurate balance between Type 1 and Type 2 errors compared to other methods used to test indirect effects (MacKinnon, Lockwood, & Williams, 2004).

In the model (see Figure 6), all four mediators were significantly, uniquely associated with all of the indicators of anti-gay bias in the predicted direction (all βs ≥ .15, all *p*s < .003), except trust of gays was not uniquely associated with ATLG (β = -.07, 95% CI [-.19, .05], *p* = .235). Importantly, consistent with Hypothesis 6, greater sinner-sin beliefs was uniquely associated with lower gay rights support (β = -.40, 95% CI [-.51, -.29]), higher ATLG (β = .52, 95% CI [.41, .63]), and lower thermometer ratings of gays (β = -.18, 95% CI [-.28, -.08]), all *p*s < .001, see Figure 6.

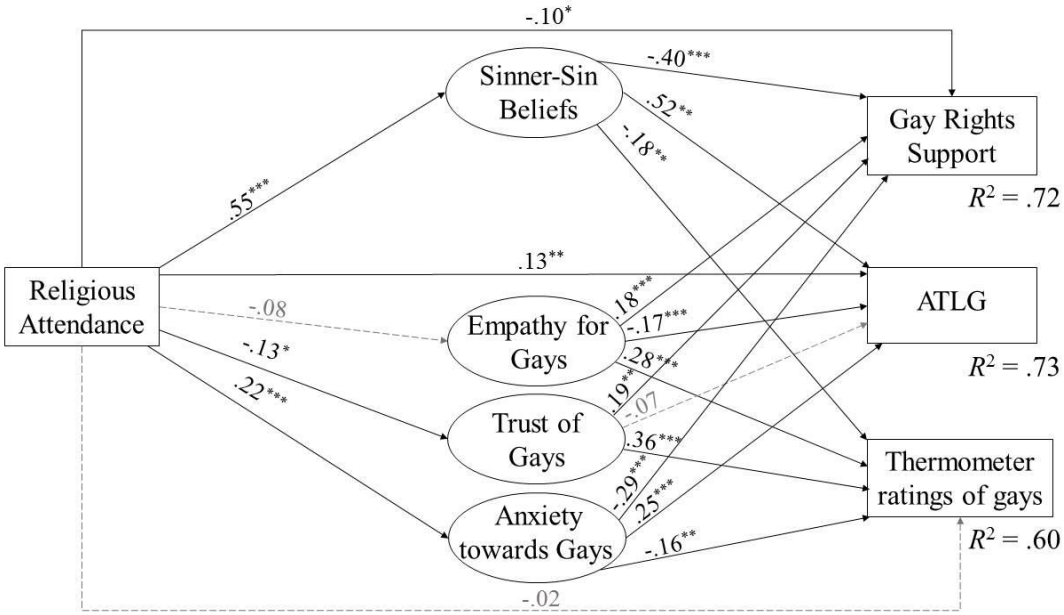

Figure 6: Mediation path model predicting anti-gay bias from religious attendance through religious justifications and intergroup affect, Mturk (Study 9). Standardized paths are presented. ATLG = Attitudes toward Lesbians and Gays, short version. All mediators were tested as latent variables (indicators not shown for brevity). Covariances among mediator residuals and covariances among criteria residuals were modelled, but not depicted for ease of presentation. Gray dotted lines indicate non-significant paths (i.e., *p* > .05). * *p* < .05 ** *p* < .01 *** *p* < .001.

Tests of indirect effects revealed that, consistent with the core hypothesis, religious attendance was associated with lower gay rights support, higher ATLG, and lower thermometer ratings of gays through greater sinner-sin beliefs (all *p*s < .002), over and above the other mediators, see Table 11. In fact, sinner-sin beliefs uniquely accounted for 52% of the relation between religious attendance and gay rights support, 59% of the relation between religious attendance and ATLG, and 43% of the relations between religious attendance and thermometer ratings of gays. In contrast, the intergroup emotions *combined* accounted for 24% of the relation between religious attendance and gay rights support, 14% of the relation between religious attendance and ATLG, and 48% of the relation between religious attendance and thermometer ratings of gays, see Table 11. Religious attendance was associated with lower thermometer ratings of gays through gay trust ($p = .049$), uniquely accounting for 22% of the relation between religious attendance and thermometer ratings of gays. There were also unique indirect effects through anxiety towards gays for all three indicators of anti-gay bias (all *p*s < .033, uniquely accounting for 10% to 15% of the relation between religious attendance and anti-gay bias). There were no significant indirect effects through empathy for gays (all *p*s > .13). There were also direct effects of religious attendance on gay rights support and ATLG, over and above the mediators (see Table 11). Thus, there may be other mediators of the relation between religious attendance and gay rights support and/or ATLG that I do not account for.

Table 11: Effects decomposition for religious attendance predicting anti-gay biases (standardized effects), Mturk (Study 9).

Outcome	Gay Rights Support		ATLG		Thermometer Ratings of Gays	
Total Effect	-.42***	[-.52, -.32]	.49***	[.39, .59]	-.23***	[-.33, -.12]
Direct Effect	-.10*	[-.18, -.01]	.13**	[.04, .21]	-.02	[-.11, .05]
Indirect Effect	-.33***	[-.41, -.24]	.36***	[.27, .44]	-.20***	[-.29, -.11]
SSB	**-.22*** **	**[-.30, -.16]**	**.29*** **	**[.20, .36]**	**-.10** **	**[-.16, -.04]**
Empathy	-.01	[-.04, .00]	.01	[.00, .04]	-.02	[-.06, .00]
Trust	-.03	[-.06, .00]	.01	[-.01, .04]	-.05*	[-.10, -.01]
Anxiety	-.06**	[-.12, -.03]	.05**	[.02, .11]	-.04*	[-.08, -.01]

Note: Empathy = Empathy for Gays. Trust = Trust of Gays. Anxiety = Anxiety towards Gays. ATLG = Attitudes toward Lesbians and Gay Men, short version. SSB = sinner-sin beliefs. Lower level and upper level of the 95% bias-corrected confidence intervals are reported in brackets. $^{\dagger}p < .10$ $^{*}p < .05$ $^{**}p < .01$ $^{**}p < .001$.

Summary of Study 9. In Study 9, I found consistent support for Hypothesis 6. Specifically, more frequent religious attendance was associated with greater sinner-sin beliefs (supporting H6a), greater sinner-sin beliefs was associated with greater anti-gay bias (supporting H6b), and sinner-sin beliefs accounted for part of the relation between religious attendance and anti-gay bias (supporting H6c). In addition, the indirect effects from religious attendance to each of the criteria variables via religious justification were unique from intergroup affect and appeared larger than the indirect effects through any of the three indicators of intergroup affect. In Study 10, I expand on the findings of Study 9 and test the final two hypotheses (Hypotheses 7 and 8).

Study 10: Familiarity with Religious Justification as a Moderator

The previous studies demonstrate that religious attendance, on average, is associated with anti-gay bias in countries with greater recognition of gay rights. However, this likely does not apply equally to everyone who attends religious services. Some specific religious communities promote intergroup bias, whereas others are more

tolerant or do not discuss homosexuality (Burch-Brown & Baker, in press). Therefore, it is important to examine factors such as religious attendance at a more fine-grained, individual level, to capture the expression of prejudice more directly (see Burch-Brown & Baker, in press, for an in-depth discussion).

Within the context of this thesis, some religious attenders are likely very familiar with phrases such as "I love the sinner and hate the sin", making sinner-sin beliefs cognitively accessible as a justification for anti-gay bias. In contrast, some frequent religious attenders may be relatively unfamiliar with such phrases, perhaps because their personal religious community does not justify anti-gay bias as an expression of religious conviction or does not use this particular justification. As such, these religious attenders would be unable to draw on such religious justification. Therefore, religious attendance may not be as strongly related to sinner-sin beliefs and anti-gay bias when familiarity with sinner-sin beliefs is relatively low. In the context of local (*vs.* global) norms (Goldstein et al., 2008) and Social Categorization Theory (Abrams et al., 1990), the norm of religious justification among religious attenders may have a strong influence if the specific local norm of one's personal social network (i.e., who one actually interacts with) communicates these social norms. I reasoned that those who are exposed to sinner-sin beliefs more frequently should report being more familiar with the phrase "I love the sinner, but hate the sin" in regards to homosexuality. Expressions of anti-gay bias may be particularly high among frequent religious attenders who are highly familiar with sinner-sin beliefs, whereas the relation between religious attendance and anti-gay bias may be lower among those who are not familiar with this phrase.

To examine this possibility, I tested familiarity with sinner-sin beliefs as a moderator of the relation between religious attendance and anti-gay bias, followed by a mediated moderation path model. As in Study 9, sinner-sin beliefs was modeled as a mediator. I hypothesized that religious attendance would be more strongly related to anti-gay bias when familiarity with sinner-sin beliefs was higher (Hypothesis 7). I also hypothesized mediation of the moderated effect (Hypothesis 8). Specifically, I hypothesized that religious attendance would be more strongly related to endorsement of sinner-sin beliefs when familiarity with sinner-sin beliefs was higher (H8a), and that there would be an indirect effect of the interaction between religious attendance and anti-gay bias through the mediator (i.e., endorsement of sinner-sin beliefs, H8b).

Method. Participants consisted of 173 heterosexual Canadian undergraduate students[12], *M*age = 20.8 (*SD* = 5.0), 82.7% female, 16.2% male, 1.2% other. Data collection continued until the end of the semester.

Measures.

Predictor.

Religious attendance. Participants indicated how frequently they attend religious services (using the same measure as in Study 9).

Moderator.

Sinner-sin familiarity. Participants were asked how often they could remember hearing the phrase "love the sinner, hate the sin" in regards to homosexuality, with responses ranging from 0 = *never heard of it* to 4 = *I have heard of it a great deal*[13]. In

[12] Additional participants (*n* = 26) who identified as a sexual minority, or did not indicate their sexual orientation, were excluded from the analyses.

[13] I also included a manipulation that primed religious justifications for anti-gay bias (i.e. "I love the sinner, hate the sin") versus a control condition to determine if this prime increased the link between religious

total, 51 participants (30%) had never heard of it, 37 participants (21%) reported they might have heard of the expression, 44 participants (25%) had heard the expression (but rarely), 19 participants (11%) had heard the expression with some regularity, and 22 participants (13%) had heard the expression a great deal.

Mediators. The same mediators were assessed as in Study 9. Specifically, I measured *Religious Justification* (α = .85)**,** *Empathy for Gays* (α = .92)**,** *Trust of Gays* (α = .75), and *Anxiety towards Gays* (α = .88), see Study 9.

Outcomes. The same outcomes were assessed as in Study 9. Specifically, I measured *thermometer ratings of gays* (r = .98), *Gay Rights Support* (α = .90), and *ATLG* (i.e., Attitudes toward Lesbians and Gay Men, short version, α = .89), see Study 9.

Results.

Bivariate correlations. Bivariate correlations among the variables were largely consistent with Study 9. Greater religious attendance was associated with lower gay rights support (r = -.46, 95% CI [-.60, -.33]), higher ATLG (r = .49, 95% CI [.36, .62]), and lower thermometer ratings of gays (r = -.26, 95% CI [-.41, -.11]), all ps < .002 (see Table 12). Religious attendance was associated with greater endorsement of sinner-sin beliefs (r = .57, 95% CI [.44, .69], p < .001), and sinner-sin beliefs was associated with lower gay rights support (r = -.73, 95% CI [-.83, -.63], p < .001), higher ATLG (r = .82, 95% CI [.76, .89], p < .001), and lower thermometer ratings of gays (r = -.52, 95%

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attendance and religious justifications. The manipulation occurred directly before participants filled out the measure of sinner-sin beliefs. A manipulation check indicated that 100% of participants in the experimental condition (*vs.* 6% in the control condition) accurately reported that the article discussed religion, and 92% of participants in the experimental condition (*vs.* 0% in the control condition) accurately reported that the article discussed sexual orientation. However, this manipulation did not have any significant effect in terms of main effects, interactions with religious attendance, or interactions with religious justifications familiarity, on any mediators or outcome variables (all ps > .10). Therefore, all analyses are collapsed across the experimental conditions.

Table 12: Bivariate correlations between variables, Canadian university sample (Study 10).

	1.	2.	3.	4.	5.	6.	7.	8.	*M*	*SD*
1. Religious attendance	-								2.31	2.04
2. Familiarity	.43***	-							1.58	1.35
3. Sinner-Sin Beliefs	.57***	.34***	-						0	1
4. Empathy for Gays	-.01	.02	-.17†	-					0	1
5. Trust of Gays	-.10	.04	-.10	.33***	-				0	1
6. Anxiety towards Gays	.21**	.15†	.32***	-.37***	-.39***	-			0	1
7. Gay Rights Support	-.46***	-.32***	-.73***	.34***	.19†	-.54***	-		5.99	1.03
8. ATLG	.49***	.29**	.82***	-.27**	-.10	.50***	-.85***	-	2.26	1.29
9. Thermometer Ratings of Gays	-.26**	-.18*	-.52***	.44***	.21*	-.55***	.71***	-.66***	76.84	25.38

Note. $N = 173$. Familiarity = sinner-sin familiarity. ATLG = Attitudes toward Lesbians and Gay Men, short version. † $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$.

CI [-.68, -.36], $p < .001$). In addition, greater religious attendance was associated with greater sinner-sin familiarity ($r = .43$, 95% CI [.29, .56], $p < .001$), and greater sinner-sin familiarity was associated with greater endorsement of sinner-sin beliefs ($r = .34$, 95% CI [.18, .51], $p < .001$).

Tests of moderation. As in Study 9, analyses were conducted using Mplus 7 statistical software (Muthén & Muthén, 1998-2012) and maximum likelihood estimation procedures with standard errors robust to non-normality (MLR) were used to estimate all model parameters. Religious attendance and sinner-sin familiarity were mean-centered, and then an interaction term was calculated by multiplying the centered variables. Religious attendance, sinner-sin familiarity, and their interaction were modeled as predictor variables, with separate regressions predicting sinner-sin beliefs, gay rights support, ATLG, and thermometer ratings of gays. At the mean level of sinner-sin familiarity, religious attendance was uniquely associated with lower gay rights support ($\beta = -.36$, 95% CI [-.51, -.21], $p < .001$), higher ATLG ($\beta = .38$, 95% CI [.26, .51], $p < .001$), and lower thermometer ratings of gays ($\beta = -.19$, 95% CI [-.35, -.03], $p = .018$), over and above sinner-sin familiarity. Sinner-sin familiarity was not uniquely associated with gay rights support ($\beta = -.12$, 95% CI [-.27, .03], $p = .111$), ATLG ($\beta = .05$, 95% CI [-.09, .20], $p = .496$), or thermometer ratings of gays ($\beta = -.07$, 95% CI [-.24, .10], $p = .395$). Consistent with Hypothesis 7, there was a significant interaction between religious attendance and sinner-sin familiarity predicting gay rights support ($\beta = -.18$, 95% CI [-.33, -.02], $p = .029$), and ATLG ($\beta = .29$, 95% CI [.15, .42], $p < .001$), see Table 13. The interaction between religious attendance and sinner-sin familiarity predicting thermometer ratings of gays was not significant ($\beta = -.11$, 95% CI [-.28, .06], $p = .216$).

Table 13: Interactions between religious attendance and religious justification familiarity predicting religious justifications and anti-gay biases, Study 10.

	Regression 1						Regression 2	
	Gay Rights		ATLG		Thermometer Ratings of Gays		Sinner-Sin Beliefs	
	b (se)	*β*	*b (se)*	*β*	*b (se)*	*β*	*b (se)*	*β*
Religious Attendance	-.18*** (*.04*)	.36	.24*** (*.04*)	.38	-2.40* (1.06)	-.19	.42*** (*.06*)	.46
Familiarity	-.09 (.06)	-.12	.05 (*.07*)	.05	-1.38 (1.62)	-.07	.08 (*.11*)	.08
Religious Attendance X familiarity	-.06* (.03)	-.18	.12*** (*.03*)	.29	-.91 (.74)	-.11	.14*** (*.04*)	.25

	Regression 3					
	Gay Rights		ATLG		Thermometer Ratings of Gays	
	b (se)	*β*	*b (se)*	*β*	*b (se)*	*β*
Religious Attendance	-.01 (.04)	-.02	.00 (.05)	-.01	1.02 (1.20)	.08
Familiarity	-.06 (.05)	-.08	.00 (.06)	.00	-.77 (1.47)	-.04
Religious Attendance X familiarity	.00 (.03)	-.01	.04 (.03)	.09	.22 (.75)	.03
Sinner-Sin Beliefs	-.41*** (.07)	-.69	.59*** (.08)	.79	-8.10*** (1.89)	-.56

Note. $N = 173$. Familiarity =Sinner-sin familiarity. Religious attendance and sinner-sin familiarity were both mean-centered. ATLG = Attitudes toward Lesbians and Gays, short. * $p < .05$ ** $p < .01$ *** $p < .001$.

At the mean level of sinner-sin familiarity, religious attendance was also uniquely associated with greater endorsement of sinner-sin beliefs (β = .46, 95% CI [.33, .60], p < .001). Sinner-sin familiarity was not uniquely associated with endorsement of sinner-sin beliefs (β = .08, 95% CI [-.10, .22], p = .297). There was also a significant interaction between religious attendance and sinner-sin familiarity predicting sinner-sin beliefs (β = .25, 95% CI [.12, .36], p < .001), see Table 13. When sinner-sin beliefs was added to the model, the interaction terms predicting gay rights support and ATLG were no longer significant (see Table 13), indicative of mediated moderation.

To probe the interactions, simple slopes of religious attendance were calculated at low (μ-1SD) and high (μ-1SD) sinner-sin familiarity. Separate regressions were conducted predicting gay rights support, ATLG, thermometer ratings of gays, and sinner-sin beliefs at low and high sinner-sin familiarity, see Figure 7. At high sinner-sin familiarity, more frequent religious attendance was more strongly associated with lower gay rights support (β = -.52, 95% CI [-.69, -.35], p < .001), higher ATLG (β = .65, 95% CI [.49, .81], p < .001), and lower thermometer ratings of gays (β = -.29, 95% CI [-.50, -.09], p = .005), see Figure 7, Panels A, B, and C. In contrast, at low sinner-sin familiarity, religious attendance was not significantly related to gay rights support (β = -.20, 95% CI [-.43, .03], p = .094), ATLG (β = .12, 95% CI [-.06, .31], p = .196), or thermometer ratings of gays (β = -.09, 95% CI [-.33, .15], p = .447).

Importantly, more frequent religious attendance was also more strongly associated with endorsement of sinner-sin beliefs at high sinner-sin familiarity (β = .69, 95% CI [.53, .85], p < .001), consistent with Hypothesis 8a. Religious attendance was also associated with greater endorsement of sinner-sin beliefs at low sinner-sin familiarity (β =

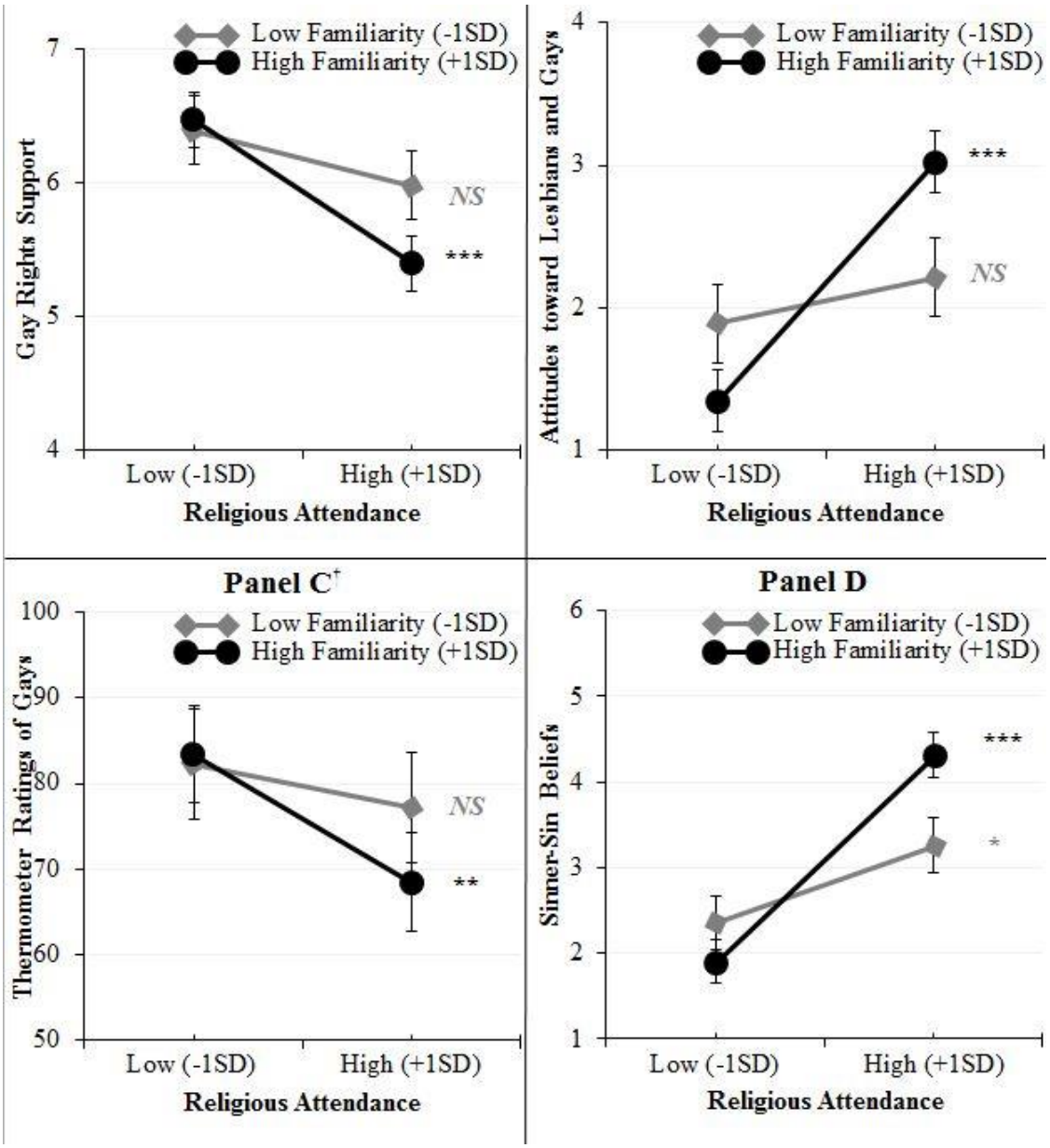

Figure 7: Simple slopes of religious attendance at low and high levels of sinner-sin familiarity, predicting sinner-sin beliefs (Panel A), gay rights support (Panel B), attitudes toward lesbians and gays, short version (Panel C), and thermometer ratings for gays (Panel D), Study 10. Note. $N = 173$. *NS* = non-significant (i.e., $p > .05$), ** $p < .01$ *** $p < .001$. Familiarity = religious justification familiarity. Standard errors are presented. † The interaction between religious attendance and sinner-sin familiarity was not statistically significant ($p = .217$), and thus should be interpreted with caution.

.22, 95% CI [.02, .42], p = .028), although the relation at low sinner-sin familiarity was only roughly 30% as strong as at high sinner-sin familiarity, see Figure 7, Panel D.

Thus, consistent with the hypotheses, religious attendance was more strongly associated with both anti-gay bias and sinner-sin beliefs when sinner-sin familiarity was high. In fact, I did not find any statistically significant evidence that religious attendance was associated with anti-gay bias when sinner-sin familiarity was low, suggesting religious justification may only promote bias to the extent that one is familiar with the religious justification for anti-gay bias.

Mediation of the moderated relation. Next, I tested a mediated moderation model. This model allowed me to examine whether the interaction between religious attendance and sinner-sin familiarity on anti-gay bias could be attributed to endorsement of sinner-sin beliefs, supporting Hypothesis 8b. A mediation model with sinner-sin beliefs as a latent variable was tested in Mplus 7 (Muthén & Muthén, 1998-2012) and full-information maximum likelihood (FIML; Arbuckle, 1996) estimation with robust standard errors. The mediators were latent variables and the structural model was saturated, meaning that all structural paths were estimated (see Figure 6). As a result, fit indices were not particularly informative because they only gauged the fit of the measurement aspects of the model. As such, I relied on decomposition of the total effects of religious attendance into each of the three criteria variables into direct and indirect effects (Mackinnon et al., 2002). Religious attendance, sinner-sin familiarity, and their interaction were modeled as predictor variables, predicting the mediator and the outcome variables (sinner-sin beliefs was modeled as the mediator, and gay rights support, ATLG,

and thermometer ratings of gays were modeled as outcome variables)[14]. Indirect effects were tested using the biased-corrected bootstrap method with 1,000 resamples and the 95% bias-corrected confidence intervals. Residual variances for all outcome variables were also allowed to covary.

Consistent with Study 9, religious attendance was associated with greater sinner-sin beliefs, which in turn, was associated with lower gay rights support, higher ATLG, and lower thermometer ratings of gays (all *p*s < .001, see Table 13). Religious attendance was not uniquely associated with gay rights support, ATLG, or thermometer ratings of gays over and above sinner-sin familiarity and endorsement of sinner-sin beliefs (all *p*s > .53), indicating there was no statistically significant relation between religious attendance and anti-gay bias that was not accounted for by sinner-sin beliefs. In addition, there was a significant interaction between religious attendance and sinner-sin familiarity predicting endorsement of sinner-sin beliefs, such that religious attendance was more strongly related to endorsement of sinner-sin beliefs when sinner-sin familiarity was high (see Table 13).

Tests of indirect effects revealed that, consistent with Study 9, religious attendance was associated with lower gay rights support, higher ATLG, and lower thermometer ratings of gays through endorsement of sinner-sin beliefs (all *p*s < .001), see Table 14. Sinner-sin beliefs accounted for 86% to 100% of the relation between religious

[14] A model was initially tested with empathy for gays, trust of gays, and anxiety towards gays modeled as simultaneous mediators. A post-hoc Monte Carlo Analysis in Mplus 7 was conducted to test that the sample size was adequate to test the entire model with all variables included. The results indicated problematic levels of bias in estimates (based on Muthén & Muthén, 2002), particularly for estimates related to empathy, trust, and anxiety. In contrast, the final model with only religious justification as a mediator (see Table 14) indicated no problems with estimation (i.e., 95% coverage). Note that all of the mediation and mediated moderation results presented in Table 14 remain statistically significant even when empathy, trust, and anxiety are included in the model, and the interaction between religious attendance and religious justification familiarity did not have any significant indirect effects through empathy, trust, or anxiety (all *p*s > .08).

attendance and anti-gay bias. Moreover, consistent with the core hypothesis of Study 10, the interaction term for religious attendance and sinner-sin familiarity had an indirect effect on lower gay rights support, greater ATLG, and lower thermometer ratings of gays through endorsement of sinner-sin beliefs (all *p*s < .005), supporting Hypothesis 7c (see Table 14). Sinner-sin beliefs accounted for 69% to 100% of the relation between the interaction term (i.e., religious attendance by sinner-sin familiarity) and anti-gay bias, see Table 14. This finding indicates that religious attendance was particularly associated with expressions of anti-gay bias when sinner-sin familiarity was high, and that this effect is largely be accounted for by endorsement of sinner-sin beliefs, consistent with Hypothesis 7.

Table 14: Effects decomposition for religious attendance predicting anti-gay bias through sinner-sin beliefs (standardized effects), Study 10.

Predictor		Outcome		
		Gay Rights Support	ATLG	Thermometer Ratings of Gays
Religious Attendance	Total Effect	-.36*** [-.51, -.23]	.38*** [.26, .51]	-.19* [-.35, -.03]
	Direct Effect	-.06 [.-21, .12]	.03 [-.12, .19]	.06 [-.12, .26]
	Indirect Effect	**-.31*** [-.45, -.18]**	**.35*** [.21, .50]**	**-.26*** [-.40, -.13]**
Sinner-sin Familiarity	Total Effect	-.12 [-.27, .03]	.05 [-.10, .21]	-.07 [-.25, .10]
	Direct Effect	-.07 [-.21, .07]	-.02 [-.13, .10]	-.03 [-.19, .12]
	Indirect Effect	-.06 [-.17, .04]	.07 [-.05, .20]	-.05 [-.16, .04]
Attendance X Sinner-sin Familiarity	Total Effect	-.18* [-.33, -.02]	.29*** [.15, .42]	-.11 [-.30, .05]
	Direct Effect	-.01 [-.15, .16]	.09 [-.03, .21]	.03 [-.16, .18]
	Indirect Effect	**-.17** [-.27, -.08]**	**.20*** [.10, .30]**	**-.14** [-.25, -.07]**

Note. ATLG = Attitudes toward Lesbians and Gay Men, short version. Lower level and upper level of the 95% bias-corrected confidence interval are reported in brackets. * $p < .05$ ** $p < .01$ ** $p < .001$.

Part 3 Discussion

In Part 3, I found considerable support for Hypotheses 5 through 8. US Google searches for "love the sinner hate the sin" coincided with Google searches for "gay rights" and "gay marriage", suggesting a social-level emphasis on gay rights coinciding with a social-level emphasis on this religious justification, supporting H5. Personal endorsement of sinner-sin beliefs accounted for part of the association between religious attendance and each form of anti-gay bias in Studies 9 (US Mturk sample) and 10 (Canadian university sample), supporting H6. Further, sinner-sin beliefs accounted for much of the link between religious attendance and anti-gay bias, uniquely from intergroup affect (e.g., empathy, trust, and anxiety), suggesting that sinner-sin beliefs captures a distinct "pathway" to anti-gay bias. In Study 10, I also found support for Hypothesis 7, that the link between religious attendance and anti-gay bias would be strongest when sinner-sin familiarity was higher (*vs*. lower). In fact, simple slopes analyses suggest that, although religious attendance was strongly associated with anti-gay bias when familiarity with sinner-sin beliefs is higher, there was a non-significant association when familiarity was lower. Furthermore, I found clear evidence of mediated moderation, such that religious attendance was more strongly associated with sinner-sin beliefs when sinner-sin familiarity was high (supporting H8a), with an indirect effect of the interaction term on anti-gay bias through endorsement of sinner-sin beliefs (supporting H8b). This finding highlights the important role of contemporary religious justifications for anti-gay bias such as "I love the sinner, but hate the sin" in promoting anti-gay bias. Overall, these findings build on the results of Studies 1 through 7, and

indicate that religious attendance promotes religious justification for anti-gay bias in countries with relatively high levels of gay rights (i.e., the U.S. and Canada).

General Discussion

Following the Justification-Suppression Model of intergroup bias, I proposed that religious attendance facilitates the justification of anti-gay bias in contexts where anti-gay bias is socially condemned. In summary, I found considerable support for all eight of the hypotheses, using diverse samples and statistical approaches. On average, more frequent religious attendance was consistently associated with greater anti-gay bias (Studies 1-7, 9, and 10, supporting Hypothesis 1), a link which could not be accounted for by theoretically meaningful covariates in nationally representative data (Studies 1-7, supporting Hypothesis 2). On average, anti-gay bias was notably lower in countries higher in gay rights recognition (Studies 4-7, supporting Hypothesis 3), reflecting large differences in social norms between countries. Religious attendance was generally more strongly associated with anti-gay bias in countries higher in gay rights recognition in two-thirds of tests of Hypothesis 4 (Studies 4-7), yet one of the cross-level interactions was not unique from covariates, and one was not statistically significant. Consistent with Hypothesis 5, volumes of Google searches for "love the sinner hate the sin" (a contemporary religious justification for anti-gay bias) were notably higher following major gay rights events. Moreover, higher volumes of Google searches for "love the sinner hate the sin" were also associated with higher volumes of Google searches for "gay rights" and "gay marriage", even when controlling for potential confounds. Finally, much of the association between religious attendance and anti-gay bias was accounted for by endorsement of a contemporary religious justification (i.e., "I love the sinner, but hate the sin", Studies 9 and 10), supporting Hypothesis 6. Further, the relations between

religious attendance and both religious justification, as well as anti-gay bias, were significantly more pronounced for those with higher (*vs*. lower) familiarity with the religious justification "I love the sinner, but hate the sin" (Study 10, supporting Hypothesis 7). Indicative of mediated moderation, this moderation effect was itself largely accounted for by greater personal endorsement of sinner-sin beliefs (Study 10, supporting Hypothesis 8).

These findings highlight the complexity of the relation between religious attendance and anti-gay bias. That is, a positive association between religious attendance and anti-gay bias only tell part of the story. Stronger relations between religious attendance and anti-gay bias in countries with greater gay rights recognition indicates that "culture wars" around homosexuality tend to be the most pronounced in countries highest in gay rights recognition. In addition, these findings provide nuance to our understanding of the relation between individual differences in religious attendance and anti-gay bias, in that meta-analytic findings focusing on Western samples (i.e., Whitley, 2009) do not necessarily generalize to environments with more extreme levels of anti-gay bias. In addition, the relation between religious attendance and anti-gay bias in more tolerant contexts is largely accounted for by religious justifications (e.g. "I love the sinner but hate the sin") that at face value appear benevolent, but may facilitate bias by framing the bias as a moral religious belief. I also found relatively strong relations between religious attendance and anti-gay bias when familiarity with sinner-sin beliefs was high, whereas I found no relation when familiarity was low, highlighting the importance of sinner-sin beliefs in facilitating anti-gay bias. As a whole, these findings suggest that, within countries that widely recognize gay rights, efforts to decrease anti-gay bias would benefit

from an emphasis on decreasing anti-gay bias among those who frequently attend religious services and taking into account morally driven religious-based justifications. In contrast, efforts to decrease anti-gay bias in countries that do not recognize gay rights may benefit from broader structural changes.

Although some research has examined anti-gay bias in countries with lower recognition of gay rights (e.g., Anderson & Koc, 2015; West & Hewstone, 2012; West, Husnu, & Lipps, 2015), the vast majority of research on anti-gay bias has been conducted in countries with more tolerant attitudes toward gays, and most research does not directly compare countries. In other words, the study of anti-gay bias has largely focused on WEIRD (i.e., Western, educated, industrialized, rich and democratic) samples, which may not be representative of humanity (Henrich, Heine, & Norenzayan, 2010). I encourage researchers to place greater focus on examining anti-gay bias across different cultures. One potential limitation to the analyses is that the phrase "love the sinner, but hate the sin", when used in regards to homosexuality, appears to be most common among Christian communities in North America (particularly the United States). Although the results suggest these types of phrases are useful for understanding religious justification for anti-gay bias in my (U.S. and Canadian) samples, future research may benefit from examining forms of religious justification that might be specific to other cultures and religious communities. I would expect that other forms of religious justifications would also be associated with greater anti-gay bias.

Of course, the association between religious attendance and anti-gay bias may be difficult to change, given that beliefs about sexuality are central to many religious teachings (Herek & McLemore, 2013). My results could be interpreted as casting further

doubt on progress, given that the relation between religious attendance and anti-gay bias is even more pronounced in countries that strongly recognize gay rights, and relations between personal religious attendance and anti-gay bias in the US and Canada (i.e., high gay rights countries) appear to be driven by religious justification. Ideologically-based justifications for bias are considered difficult to overcome (Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004; Jost et al., 2014), and moral communities have a tendency to bind individuals to endorse a shared moral reality (Graham & Haidt, 2010) and promote conformity and polarization (Abrams et al., 1990). That is, organized religions may maintain local norms about homosexuality that conflict with secular social norms, which could limit social change and increase political polarization around gay rights.

Encouragingly, I believe that three lines of intervention offer promise. First, religiosity was strongly associated with anti-Black bias both before and during the US Civil Rights era, but this relation is now relatively weaker (Hall et al., 2010). Historically, religious teachings promoted and justified racist ideologies, but these teachings gradually became socially unacceptable and uncommon (Herek, 1987). Indeed, I found in Study 3 (i.e., the ANES) that more frequent religious attendance was actually associated with *less* anti-Black bias. In contrast, many religious institutions still discuss and preach the alleged "sins" of homosexuality. If religious norms on preaching about homosexuality experience a shift similar to preaching about race (e.g., away from discussing homosexuality, or toward preaching tolerance), relations between religious attendance and anti-gay bias may likewise decrease. There are some indications that shifts in local religious norms are already occurring, as many religious denominations have become more inclusive of gays in recent years (see Human Rights Campaign, n.d.). In particular,

I draw attention to the results of Study 10, which suggest that religious attendance is *not* significantly associated with anti-gay bias for those who are unfamiliar with the religious justification "I love the sinner, but hate the sin". Thus, if religious justification for anti-gay bias ceases to be present or communicated in religious communities, religious attendance may no longer be associated with anti-gay bias in the future, given that group-level norms are strongly influenced by group leaders (see Hogg, 2001). Such interventions, therefore, may benefit from the explicit support of religious leaders.

Second, intergroup contact between heterosexual religious attenders and gays may promote religious tolerance of gays. Intergroup contact is associated with decreased prejudice toward a wide variety of marginalized social groups (Hodson & Hewstone, 2013), with gay contact more effective than other forms of intergroup contact (Pettigrew & Tropp, 2006). In general, intergroup contact effectively reduces bias, especially among those with strong ideological and person-based opposition to the target (Dhont & Van Hiel, 2009; Hodson, 2008, 2011; Hodson, Costello, & MacInnis, 2013; Hodson, Turner, & Choma, 2017), and in countries with low recognition of gay rights (e.g., Jamaica; West & Hewstone, 2012). Of particular relevance, intergroup contact is especially effective at decreasing anti-gay bias among those higher in right-wing/religious ideologies (Cunningham & Melton, 2013; Hodson, Harry, et al., 2009), suggesting those who attend religious services frequently may likewise benefit particularly strongly from intergroup contact with gays, thereby reducing social divisions.

Finally, a recent field study found that political canvassing was effective at decreasing anti-transgender bias, with reductions in prejudice maintained even after three months (Broockman & Kalla, 2016). This canvassing strategy focuses on actively

engaging with an individual by asking them to reflect on a time they had been treated unfairly and then relate that experience back to what transgender people face. The authors argue that such reflection exercises are effective at overcoming ideological barriers because the research participants are actively involved in the conversation and can learn from their own experience. Consistent with this finding, lab-based perspective-taking exercises have been effective at decreasing anti-gay bias (see Hodson, Choma, et al., 2009). Future research would benefit from utilizing such an exercise with those with frequent religious attendance.

There are also many potential avenues to expand on the results. In the present study, I focused on explicit and controlled components of anti-gay bias, given that religious justification for anti-gay bias are explicitly endorsed and used in political discourse. It would also be interesting to examine the potential relation between religious attendance and implicit and/or automatic forms of bias. Although I may expect that religious attendance would also be associated with anti-gay implicit attitudes, recent research found that constructs that overlap with religious attendance (e.g., religious fundamentalism, intrinsic and extrinsic religiosity) were unrelated to implicit anti-gay bias (Anderson & Koc, 2015), which suggests religious attendance may be unrelated to implicit anti-gay bias. In contrast, given that I found that relations between religious attendance were unique from other indicators of religiosity (e.g., religious fundamentalism), religious attendance may be associated with implicit anti-gay bias even if other religiosity variables are not.

It also would be useful to determine whether “sinner-sin” justifications can account for the relation between religious attendance and anti-gay bias among non-

Christian religious groups and non-Western cultures. If "sinner-sin" justifications are not able to account for this relation in other religious and cultural contexts, alternative religious justifications for anti-gay bias could be examined to explore the generalizability of the mediation results (e.g., religious justifications unique to the cultural or religious experience of the participants in the sample). In addition, it would be valuable to test the moderation by familiarity with sinner-sin beliefs in Study 10 in different types of samples. In my sample, there was enough variability in familiarity with sinner-sin beliefs to test for moderation (see the Study 10 Method section), but moderation may be less robust in samples in which there is little variability in familiarity with sinner-sin beliefs, such as samples in which familiarity is high across participants (e.g., students at an Evangelical Christian university) or low across participants (e.g., students at a very secular liberal arts university).

These results also have potential implications for bias against other outgroups. I found in the ANES that more frequent religious attendance was also associated with greater anti-atheist bias, over and above covariates (see Study 3). I encourage researchers to examine potential mediators of this relation. Anti-atheist bias is strongly linked to distrust (Gervais, Shariff, & Norenzayan, 2011). Following the findings, it is plausible that there may be religious justifications for anti-atheist bias (e.g., people who do not believe in God should not be trusted) that link religious attendance to anti-atheist bias. I also found in the ANES that more frequent religious attendance was associated with less anti-Black bias, over and above covariates. Critically, atheists are seen as a threat to religious tradition (Gervais et al., 2011), whereas Blacks are not (Hall et al., 2010). These results suggest that religious attendance is not positively associated with all forms of

prejudice, but may be primarily associated with bias against groups seen as morally deviant or threatening to dominant religious beliefs. Indeed, in America, Blacks tend to be more religious than Whites on average (Taylor, Chatters, Jayakody, & Levin, 1996), and more religious Whites may see Blacks as sharing common values, potentially reducing anti-Black bias. Liberals and conservatives tend to express greater bias against groups they view as ideologically dissimilar, but less bias against those they view as ideologically similar (Brandt, Reyna, Chambers, Crawford, & Wetherell, 2014; Brandt & Van Tongeren, 2015; Rokeach & Mezei, 1966). The results suggest a similar pattern of results may be found for religious attendance, which may be fruitfully explored in future research.

The analyses for this thesis focus on expressions of anti-gay bias as an outcome related to frequency of religious attendance. However, like most social phenomena, there is the potential for cyclical effects. For instance, people may form and/or join religious communities that share their views about homosexuality and gay rights. Indeed, it is common for people to form and maintain social networks of politically like-minded individuals (Barberá, Jost, Nagler, Tucker, & Bonneau, 2015), and group membership and identification itself can further polarize views (Abrams et al., 1990). Future research would benefit from examining if people choose religious communities based on views about homosexuality, and if these group dynamics further increase anti-gay bias in religious communities in which anti-gay bias is more common. If this is the case, such cyclical effects could potentially exacerbate “culture war” dynamics on the topic of gay rights.

There were findings that were not entirely consistent with the hypotheses for three outcomes variables. In Studies 5 and 6, two of the six tested MLM cross-level interactions (i.e., predicting gay freedom support and societal tolerance of homosexuality) did not support the hypothesis of stronger relations between religious attendance and gay bias in countries higher in gay rights recognition. In Study 10, I found an indirect (but no direct) effect for the interaction between religious attendance and religious justification familiarity predicting thermometer ratings of gays. What these three outcome variables (i.e., gay freedom support, societal tolerance of homosexuality, and thermometer ratings of gays) appear to have in common is that they are only indirectly relevant to religiously-oriented political rhetoric about homosexuality. That is, in Western countries with high recognition of gay rights (e.g., Canada, the United States), it is relatively rare to hear political arguments that gays should lose their freedoms, be shunned from society, or be personally disliked. In contrast, rhetoric condemning gay marriage, gay adoption, and homosexuality are much more commonplace (Browne & Nash, 2014; Herek & McLemore, 2013). In other words, this variability in the results may in part reflect "love the sinner, hate the sin" rhetoric and the conflicted nature of religious prejudice (see Altemeyer, 2003; Crandall & Eshleman, 2003; Hunsberger & Jackson, 2005; Whitley, 2009). An alternative explanation for two of the six cross-level interactions not supporting the hypotheses is that some cross-national datasets had relatively less power to detect cross-level interactions, given that power to detect a cross-level interaction is strongly influenced by Level 2 degrees of freedom (Snijders & Bosker, 2012). In the ESS (with 27 countries) and Pew (with 31 or 32 countries), only one of the three interactions was unique from covariates. In contrast, in the EVS (45

countries) and WVS (51 or 52 countries), all three cross-level interactions were significant and unique from covariates. Future research with different types of outcome variables (i.e., capturing more or less morally driven anti-gay bias) and a large number of countries may help disambiguate these alternative explanations.

Given the correlational analyses, no causal effects of religious attendance or religious justification can be definitively asserted. Yet, the research question is well-suited to the correlation approach, recognizing the importance of multiple levels of influence (i.e., both the person and the situation, see Choma & Hodson, 2008; Hodson & Dhont, 2015), and the cumulative effects of religious attendance. In addition, I use a broad range of analysis, taking into account multi-level modelling with cross-level interactions, mediation, and mediated moderation, which all support the hypotheses through convergent evidence.

Future research would benefit from examining the relation between religious attendance and anti-gay bias longitudinally to determine whether religious attendance leads to higher levels of religious justification and anti-gay bias at a later time point, and whether there are any cyclical effects of anti-gay bias on religious attendance. In addition, I used country-level gay rights recognition as an indicator of social norms about anti-gay bias, given that gay rights recognition can be reliably measured and directly taps the extent to which the government endorses or rejects anti-gay bias and discrimination. However, I did not include other country-level predictors because tests of cross-level interactions rely on Level 2 degrees of freedom (Snijders & Bosker, 2012), in this case requiring a large number of countries to test more complex hypotheses. Future research may benefit from testing additional country-level predictors of anti-gay bias and cross

level interactions to determine additional country-level factors that may impact the relation between religious attendance and anti-gay bias. However, this would likely necessitate a larger number of countries for adequate statistical power. Multi-level modelling using repeated cross-sectional data may also aid in determining whether changes in country-level gay rights recognition are associated with changes in the relation between religious attendance and anti-gay bias.

Overall, the results of the thesis are consistent with a Justification-Suppression Model framework for understanding the relation between religious attendance and anti-gay bias. My analyses of nationally representative datasets (Studies 1 through 7) indicate clear, consistent relations between religious attendance and anti-gay bias representing the responses of more than 215,000 participants from 97 different countries. These relations were not explained by individual-level factors strongly associated with both religious attendance and anti-gay bias (e.g., religious fundamentalism, religious denomination). There are critical differences between countries as a function of gay rights recognition, not only in terms of average anti-gay bias, but also in terms of how strongly linked religious attendance is to anti-gay bias, suggesting religious justification may be involved in resistance against gay rights progress. I also found, in Studies 9 and 10, that much of the effect of religious attendance on anti-gay bias could be accounted for by religious justifications such as “I love the sinner, but hate the sin”. Further, religious attendance was associated with anti-gay bias among those very familiar with the phrase “I love the sinner, but hate the sin”, but was not associated with anti-gay bias among those unfamiliar with the phrase. These findings directly support my proposition that the relation between religious attendance and anti-gay bias is largely due to religious

justifications that are known or available to the individual. Consistent with psychological theory on the justification of bias (Crandall & Eshleman, 2003; Jost et al., 2014), social norm theory (Crandall et al., 2003; Cialdini et al., 1990), the role of religiosity in promoting anti-gay bias (Herek & McLemore, 2013; Hunsberger & Jackson, 2005; Whitley, 2009), and resistance against gay rights progress (Browne & Nash, 2014; Herek & McLemore, 2013), my findings indicate that participation in religious communities may provide local moral norms that justify anti-gay bias, resulting in more pronounced culture war divisions evident in more tolerant contexts.

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Supplemental Table 1: ILGA ratings of gay rights recognition, European Values Survey, page 1 of 3.

Country	Legality of homosexuality		Legal Protections			Spousal Rights				**Total**
	Illegal	Death penalty	Ban Job Discrimination	Constit-utional Protection	Hate Crime Ban	Full Marriage Equality	Registered Partnerships	Some Rights	Adoption Rights	
Albania	0	0	0	0	0	0	0	0	0	**0**
Azerbaijan	0	0	0	0	0	0	0	0	0	**0**
Austria	0	0	1	0	0	0	0	1	0	**2**
Armenia	0	0	0	0	0	0	0	0	0	**0**
Belgium	0	0	1	0	1	3	0	0	1	**6**
Bosnia and Herz.	0	0	1	0	0	0	0	0	0	**1**
Bulgaria	0	0	1	0	0	0	0	0	0	**1**
Belarus	0	0	0	0	0	0	0	0	0	**0**
Croatia	0	0	1	0	1	0	0	1	0	**3**
Cyprus	0	0	1	0	0	0	0	0	0	**1**
Northern Cyprus	-1	0	0	0	0	0	0	0	0	**-1**
Czech Republic	0	0	1	0	0	0	2	0	0	**3**
Denmark	0	0	1	0	0	0	2	0	0	**3**
Estonia	0	0	1	0	1	0	0	0	0	**2**
Finland	0	0	1	0	0	0	2	0	0	**3**
France	0	0	1	0	1	0	2	0	0	**4**
Georgia	0	0	1	0	0	0	0	0	0	**1**
Germany	0	0	1	0	0	0	2	0	0	**3**
Greece	0	0	1	0	0	0	0	0	0	**1**

Supplemental Table 1: ILGA ratings of gay rights recognition, European Values Survey, page 2 of 3.

Country	Legality of homosexuality		Legal Protections			Spousal Rights				**Total**
	Illegal	Death penalty	Ban Job Discrim ination	Constit- utional Protection	Hate Crime Ban	Full Marriage Equality	Registered Partnerships	Some Rights	Adoption Rights	
Hungary	0	0	1	0	0	0	0	1	0	**2**
Iceland	0	0	0	0	0	0	2	0	1	**3**
Ireland	0	0	1	0	0	0	0	0	0	**1**
Latvia	0	0	1	0	0	0	0	0	0	**1**
Lithuania	0	0	1	0	1	0	0	0	0	**2**
Luxembourg	0	0	1	0	1	0	2	0	0	**4**
Malta	0	0	1	0	0	0	0	0	0	**1**
Moldova	0	0	0	0	0	0	0	0	0	**0**
Montenegro	0	0	0	0	0	0	0	0	0	**0**
Netherlands	0	0	1	0	1	3	0	0	1	**6**
Norway	0	0	1	0	0	0	2	0	0	**3**
Poland	0	0	1	0	0	0	0	0	0	**1**
Portugal	0	0	1	1	1	0	0	1	0	**4**
Romania	0	0	1	0	0	0	0	0	0	**1**
Russia	0	0	0	0	0	0	0	0	0	**0**
Serbia	0	0	1	0	0	0	0	0	0	**1**
Slovakia	0	0	1	0	0	0	0	0	0	**1**
Slovenia	0	0	1	0	0	0	2	0	0	**3**
Spain	0	0	1	0	1	3	0	0	0	**5**

Supplemental Table 1: ILGA ratings of gay rights recognition, European Values Survey, page 3 of 3.

Country	Legality of homosexuality		Legal Protections			Spousal Rights				**Total**
	Illegal	Death penalty	Ban Job Discrim ination	Constit- utional Protecti	Hate Crime Ban	Full Marriage Equality	Registered Partnerships	Some Rights	Adoption Rights	
Sweden	0	0	1	1	1	0	2	0	1	**6**
Switzerland	0	0	0	1	0	0	2	0	0	**3**
Turkey	0	0	0	0	0	0	0	0	0	**0**
Ukraine	0	0	0	0	0	0	0	0	0	**0**
Macedonia	0	0	0	0	0	0	0	0	0	**0**
Great Britain	0	0	1	0	1	0	2	0	1	**5**
Northern Ireland	0	0	1	0	1	0	2	0	1	**5**
Kosovo	0	0	0	0	0	0	0	0	0	**0**

Notes. Ratings are based on the 2008 ILGA State-Sponsored Homophobia report (Ottoson, 2008). Ban Job Discrim = ban on discrimination in employment. Constitutional = constitutional prohibition of discrimination. Some rights =non-spousal rights that provide some basic marital rights, but less than the rights associated with a registered partnership. Bosnia and Herz. = Bosnia and Herzegovina.

Supplemental Table 2: ILGA ratings of gay rights recognition, European Social Survey, page 1 of 2

Country	Legality of homosexuality			Legal Protections				Spousal Rights				**Total**
	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	
Belgium	0	0	0	1	0	1	1	3	0	0	1	**7**
Bulgaria	0	0	0	1	0	0	0	0	0	0	0	**1**
Switzerland	0	0	0	0	0	0	0	0	2	0	0	**2**
Cyprus	0	0	0	1	0	0	0	0	0	0	0	**1**
Czech Republic	0	0	0	1	0	0	0	0	0	1	0	**2**
Germany	0	0	0	1	0.5	0	0	0	2	0	0.5	**4**
Denmark	0	0	0	1	0	1	1	0	2	0	1	**6**
Estonia	0	0	0	1	0	0	1	0	0	0	0	**2**
Spain	0	0	0	1	0	0	1	3	0	0	1	**6**
Finland	0	0	0	1	0	0	0	0	2	0	0.5	**3.5**
France	0	0	0	1	0	1	1	0	0	1	0	**4**
United Kingdom	0	0	0	1	0	1	0.5	0	2	0	0.5	**5**
Hungary	0	0	0	1	0	0	0	0	2	0	0	**3**
Ireland	0	0	0	1	0	0	1	0	2	0	0	**4**
Israel	0	0	0	1	0	0	0	0	2	0	1	**4**
Iceland	0	0	0	0	0	0	1	3	0	0	1	**5**
Italy	0	0	0	1	0	0	0	0	0	0	0	**1**
Lithuania	0	0	0	1	0	0	1	0	0	0	0	**2**
Netherlands	0	0	0	1	0	1	1	3	0	0	1	**7**

Supplemental Table 2: ILGA ratings of gay rights recognition, European Social Survey, page 2 of 2

Country	Legality of homosexuality			Legal Protections				Spousal Rights				**Total**
	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	
Norway	0	0	0	1	0	0	1	3	0	0	1	**6**
Poland	0	0	0	1	0	0	0	0	0	0	0	**1**
Portugal	0	0	0	1	1	1	1	3	0	0	0	**7**
Russia	0	0	0	0	0	0	0	0	0	0	0	**0**
Sweden	0	0	0	1	1	1	1	3	0	0	1	**8**
Slovenia	0	0	0	1	0	0	0	0	0	1	0	**2**
Slovakia	0	0	0	1	0	0	0	0	0	0	0	**1**
Ukraine	0	0	0	0	0	0	0	0	0	0	0	**0**

Notes. Ratings are based on the 2012 ILGA State-Sponsored Homophobia report (Itaborahay, 2012). Ban Job Discrim = ban on discrimination in employment. Constitutional = constitutional prohibition of discrimination. Incite hatred = ban on incitement to hatred (i.e., hate speech laws). Some rights = spousal rights that provide some basic marital rights, but less than the rights associated with a registered partnership. Rating of 0.5 were assigned when the law was present in part, but not all, of the country (e.g., when there are different laws in different provinces).

Supplemental Table 3: ILGA ratings of gay rights recognition, Spring 2013 Pew Global Attitudes Project, page 1 of 2

	Legality of homosexuality			Legal Protections				Spousal Rights				
Country	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	**Total**
Argentina	0	0	0	0	0.5	0	0	3	0	0	1	**4.5**
Australia	0	0	-0.5	1	0	0.5	0.5	0	0	1	1	**3.5**
Bolivia	0	0	0	1	1	1	1	0	0	0	0	**4**
Brazil	0	0	0	0.5	0.5	0	0	0	2	0	1	**4**
Canada	0	0	-1	1	0	1	1	3	0	0	1	**6**
Chile	0	0	-1	0	0	1	0	0	0	0	0	**0**
China	0	0	0	0	0	0	0	0	0	0	0	**0**
Czech Repub.	0	0	0	1	0	0	0	0	0	1	0	**2**
Egypt	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
El Salvador	0	0	0	1	0	0	0	0	0	0	0	**1**
Ghana	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Greece	0	0	-1	1	0	1	0	0	0	0	0	**1**
Indonesia	0	0	-1	0	0	0	0	0	0	0	0	**-1**
Israel	0	0	0	1	0	0	0	0	0	1	1	**3**
Italy	0	0	0	1	0	0	0	0	0	0	0	**1**
Jordan	0	0	0	0	0	0	0	0	0	0	0	**0**
Kenya	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Lebanon	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Malaysia	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Mexico	0	0	0	1	0	0.5	0.5	0	2	0	0.5	**4.5**
Nigeria	-1	-0.5	-1	0	0	0	0	0	0	0	0	**-2.5**

Supplemental Table 3: ILGA ratings of gay rights recognition, Spring 2013 Pew Global Attitudes Project, page 2 of 2

Country	Legality of homosexuality			Legal Protections				Spousal Rights				**Total**
	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnerships	Some Rights	Adoption Rights	
Pakistan	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Palestinian T.	-0.5	0	-0.5	0	0	0	0	0	0	0	0	**-1**
Philippines	0	0	0	0.5	0	0	0	0	0	0	0	**0.5**
Poland	0	0	0	1	0	0	0	0	0	0	0	**1**
Russia	0	0	0	0	0	0	0	0	0	0	0	**0**
Senegal	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
South Africa	0	0	0	1	1	1	1	3	0	0	0	**8**
South Korea	0	0	0	0	0	0	0	0	0	0	1	**0**
Turkey	0	0	0	0	0	0	0	0	0	0	0	**0**
Uganda	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Venezuela	0	0	0	1	0	0	0	0	0	0	0	**1**

Notes. Ratings are based on the 2013 ILGA State-Sponsored Homophobia report (Itaborahay & Zhu, 2013). Ban Job Discrim = ban on discrimination in employment. Constitutional = constitutional prohibition of discrimination. Incite hatred = ban on incitement to hatred (i.e., hate speech laws). Some right = spousal rights that provide some basic marital rights, but less than the rights associated with a registered partnership. Czech Repub. = Czech Republic. Palestinian T. = Palestinian Territories. Rating of 0.5 were assigned when the law was present in part, but not all, of the country (e.g., when there are different laws in different provinces).

Supplemental Table 4: ILGA ratings of gay rights recognition, World Values Survey, page 1 of 3

	Legality of homosexuality			Legal Protections				Spousal Rights				
Country, year	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatre	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	**Total**
Algeria ‘13	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Azerbaijan	0	0	0	0	0	0	0	0	0	0	0	**0**
Argentina ‘13	0	0	0	0	0.5	0	0	3	0	0	1	**4.5**
Australia ‘12	0	0	0	1	0	0	0.5	0	0	1	0.5	**3**
Bahrain ‘14	0	0	-1	0	0	0	0	0	0	0	0	**-1**
Armenia ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
Brazil ‘14	0	0	0	0.5	0.5	0	0	0	2	0	1	**4**
Belarus ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
Chile ‘11	0	0	-1	0	0	0	0	0	0	0	0	**-1**
Taiwan ‘12	0	0	0	1	0	0	0	0	0	0	0	**1**
Colombia ‘12	0	0	0	1	0	1	1	0	2	0	0	**5**
Cyprus ‘11	0	0	0	1	0	0	0	0	0	0	0	**1**
Ecuador ‘13	0	0	0	1	1	1	1	0	0	1	0	**5**
Estonia ‘11	0	0	0	1	0	0	1	0	0	0	0	**2**
Palestine ‘13	-0.5	0	-0.5	0	0	0	0	0	0	0	0	**-1**
Germany ‘13	0	0	0	1	0.5	0	0	0	2	0	0	**3.5**
Ghana ‘12	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Hong Kong	0	0	0	0	0	0	0	0	0	0	0	**0**
India ‘14	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Iraq ‘12	-0.5	0	0	0	0	0	0	0	0	0	0	**-0.5**
Japan ‘10	0	0	0	0.5	0	0	0	0	0	0	0	**0.5**

Supplemental Table 4: ILGA ratings of gay rights recognition, World Values Survey, page 2 of 3.

Country, year	Legality of homosexuality			Legal Protections				Spousal Rights				**Total**
	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	
Kazakhstan ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
South Korea ‘10	0	0	0	0	0	0	0	0	0	0	0	**0**
Kyrgyzstan ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
Lebanon ‘13	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Libya ‘14	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Malaysia ‘12	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Mexico ‘12	0	0	0	0.5	0	0.5	0.5	0	0	0.5	0.5	**2.5**
Netherlands ‘12	0	0	0	1	0	1	1	3	0	0	1	**7**
New Zealand ‘11	0	0	0	1	0	1	0	0	2	0	0	**4**
Nigeria ‘11	-1	-0.5	-1	0	0	0	0	0	0	0	0	**-2.5**
Pakistan ‘12	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Peru ‘12	0	0	0	0	0	0	0	0	0	0	0	**0**
Philippines ‘12	0	0	0	0	0	0	0	0	0	0	0	**0**
Poland ‘12	0	0	0	1	0	0	0	0	0	0	0	**1**
Romania ‘12	0	0	0	1	0	1	1	0	0	0	0	**3**
Russia ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
Rwanda ‘12	0	0	-1	0	0	0	0	0	0	0	0	**-1**
Slovenia ‘11	0	0	0	1	0	0	0	0	0	1	0	**2**
South Africa ‘13	0	0	0	1	1	0	1	3	0	0	1	**7**
Zimbabwe ‘12	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Spain ‘11	0	0	0	1	0	1	1	3	0	0	1	**7**

Supplemental Table 4: ILGA ratings of gay rights recognition, World Values Survey, page 3 of 3.

	Legality of homosexuality			Legal Protections				Spousal Rights				
Country, year	Illegal	Death penalty	Age of Consent	Ban Job Discrim	Constit-utional	Hate Crime	Incite Hatred	Full Marriage	Registered Partnership	Some Rights	Adoption Rights	**Total**
Sweden ‘11	0	0	0	1	1	1	1	3	0	0	1	**8**
Thailand ‘13	0	0	0	0	0	0	0	0	0	0	0	**0**
Trin. & Tob. ‘11	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Tunisia ‘13	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Turkey ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
Ukraine ‘11	0	0	0	0	0	0	0	0	0	0	0	**0**
United States	0	0	0	0.5	0	1	0	0	0.5	1	0.5	**3.5**
Uruguay ‘11	0	0	0	0	0	1	1	0	0	0	0	**2**
Uzbekistan ‘11	-1	0	-1	0	0	0	0	0	0	0	0	**-2**
Yemen ‘14	-1	-1	-1	0	0	0	0	0	0	0	0	**-3**

Notes. Ratings are based on the 2010-2014 ILGA State-Sponsored Homophobia report (Bruce-Jones & Itaborahay, 2011; Itaborahay, 2012; Itaborahay & Zhu, 2013, 2014, Ottoson, 2010). Ban Job Discrim = ban on discrimination in employment. Constitutional = constitutional prohibition of discrimination. Incite hatred = ban on incitement to hatred (i.e., hate speech laws). Some right = spousal rights that provide some basic marital rights, but less than the rights associated with a registered partnership. Trin. & Tob. = Trinidad and Tobago. Rating of 0.5 were assigned when the law was present in part, but not all, of the country (e.g., when there are different laws in different provinces).

Appendix E: Measures

Measure A: Sinner-Sin Beliefs

Please answer the following questions honestly, keeping in mind that we are most interested in YOUR initial response.

1. When it comes to the topic of homosexuality, I love the sinner but hate the sin.

   1 2 3 4 5 6 7

   Strongly Disagree — Strongly Agree

2. Believing that a gay person's sexual behavior is sinful does NOT make one homophobic.

   1 2 3 4 5 6 7

   Strongly Disagree — Strongly Agree

3. I am bothered by homosexual behavior, not gay people.

   1 2 3 4 5 6 7

   Strongly Disagree — Strongly Agree

4. Considering gay sexual behavior sinful is usually homophobic.

   1 2 3 4 5 6 7

   Strongly Disagree — Strongly Agree

Measure B: Empathy for Gays

Please give your answer by circling the number most appropriate on the seven point scale (1 = *not at all*, to 7 = *very much*).

1. Please indicate the extent to which you feel sympathetic towards gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

2. Please indicate the extent to which you feel compassionate towards gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

3. Please indicate the extent to which you feel softhearted towards gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

4. Please indicate the extent to which you feel warm towards gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

5. Please indicate the extent to which you feel tender towards gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

6. Please indicate the extent to which you feel moved by gays and lesbians.

1	2	3	4	5	6	7
Not at all						**Very**

Measure C: Trust of Gays

For each item listed below, please circle the number that best applies.

1. Gays and lesbians are trustworthy.

1 2 3 4 5 6 7
Strongly disagree Strongly Agree

2. When gays and lesbians come near me, I do not trust them most of the time.

1 2 3 4 5 6 7
Strongly disagree Strongly Agree

3. Gays and lesbians can easily be trusted.

1 2 3 4 5 6 7
Strongly disagree Strongly Agree

4. Generally, there are enough reasons to distrust gays and lesbians.

1 2 3 4 5 6 7
Strongly disagree Strongly Agree

Measure D: Anxiety towards Gays

1. If you were the only straight person and you were interacting with gay people (e.g., talking with them, working on a project with them), how would you feel compared to occasions when you were interacting with other straight people? (Note: If you do not identify as straight, you can mark "not applicable" for these questions).
When working with gay people, I would feel:

	Not at all						**Extremely**
	-3	**-2**	**-1**	**0**	**+1**	**+2**	**+3**
a) I would feel awkward	-3	-2	-1	0	+1	+2	+3
b) I would feel self-conscious	-3	-2	-1	0	+1	+2	+3
c) I would feel happy	-3	-2	-1	0	+1	+2	+3
d) I would feel accepted	-3	-2	-1	0	+1	+2	+3
e) I would feel confident	-3	-2	-1	0	+1	+2	+3
f) I would feel irritated	-3	-2	-1	0	+1	+2	+3
g) I would feel impatient	-3	-2	-1	0	+1	+2	+3
h) I would feel defensive	-3	-2	-1	0	+1	+2	+3
i) I would feel suspicious	-3	-2	-1	0	+1	+2	+3
j) I would feel careful	-3	-2	-1	0	+1	+2	+3

Measure E: Gay Rights Support

1. Gays and lesbians should be protected by hate-crime legislation.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

2. Gays and lesbians should not be allowed to adopt children.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

3. Gays and lesbians should be allowed to marry.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

4. Homosexuality should be illegal in this country.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

5. Immigrant partners of gays and lesbians should receive the same immigration rights as partner of heterosexuals.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

6. Gays and lesbians should be able to display affection with their partners in public.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

7. Gays and lesbians should not be allowed to flaunt their homosexuality in public by having things like parades, marches, and rallies.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

8. The government should be allowed to censor magazines, newspapers, or other printed material that deals with homosexuality.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

9. Gays and lesbians should not be allowed to teach school-aged children.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

10. Public libraries should not carry books that deal with homosexuality.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

11. Public tax dollars should not go to organizations that promote tolerance for gays and lesbians.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

12. A landlord should not be allowed to refuse to rent a house or an apartment to somebody who is gay or lesbian.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

13. The gay rights movement is just as important as other civil rights movements of the past, such as those led by African Americans and women.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

14. If the military discovers a member is gay or lesbian, it should not be allowed to discharge that person from service.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

15. A potential employee's homosexuality should never be an issue in hiring decisions.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

16. The "gay rights movement" signifies a decline in morality in this country.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

17. If we give gays and lesbians the same rights as heterosexuals, than we will have to give them to other "alternative lifestyles" like incest, bestiality, and polygamy.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

18. The government has no right interfering with the private consensual sex-lives of gays and lesbians.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

19. The age of consent for homosexual sex should be higher than the age of consent for heterosexual sex.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

20. Defending the civil rights of gays and lesbians also helps to defend the civil rights of everyone else.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

Measure F: Attitudes toward Lesbians and Gays, Short Version

1. Lesbians just can't fit into our society.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

2. State laws regulating private, consenting lesbian behavior should be loosened.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

3. Female homosexuality is a sin.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

4. Female homosexuality in itself is no problem, but what society makes of it can be a problem.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

5. Lesbians are sick (unhealthy/perverse).

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

6. I think male homosexuals are disgusting.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

7. Male homosexuality is a perversion.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

8. Just as in other species, male homosexuality is a natural expression of sexuality in human men.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

9. Homosexual behavior between two men is just plain wrong.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

10. Male homosexuality is merely a different kind of lifestyle that should *not* be condemned.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

Appendix F: Ethics Approval Forms

Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE:	12/2/2013		
PRINCIPAL INVESTIGATOR:	HODSON, Gordon Psychology		
FILE:	13-084 - HODSON		
TYPE:	Ph. D.	STUDENT: SUPERVISOR:	Mark Hoffarth Gordon Hodson

TITLE: Thinking about Religion and Society

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW Expiry Date: 12/31/2014

The Brock University Social Sciences Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 12/2/2013 to 12/31/2014.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 12/31/2014. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at http://www.brocku.ca/research/policies-and-forms/research-forms.

In addition, throughout your research, you must report promptly to the REB:

a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
c) New information that may adversely affect the safety of the participants or the conduct of the study;
d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

Jan Frijters, Chair
Social Sciences Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE: February 4, 2016

PRINCIPAL INVESTIGATOR: HODSON, Gordon - Psychology

FILE: 15-011 - HODSON

TYPE: Ph. D. STUDENT: Mark Hoffarth
SUPERVISOR: Gordon Hodson

TITLE: Media Reactions and Social Attitudes

ETHICS CLEARANCE GRANTED

Type of Clearance: MODIFICATION Expiry Date: 8/31/2016

The Brock University Social Sciences Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement.

Modification: Changes to measures.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before **8/31/2016**. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at http://www.brocku.ca/research/policies-and-forms/research-forms.

In addition, throughout your research, you must report promptly to the REB:

a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
c) New information that may adversely affect the safety of the participants or the conduct of the study;
d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved: KMaich

Kimberly Maich, Chair
Social Sciences Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

Brock University
Research Ethics Office
Tel: 905-688-5550 ext. 3035
Email: reb@brocku.ca

Social Science Research Ethics Board

Certificate of Ethics Clearance for Human Participant Research

DATE:	1/4/2017		
PRINCIPAL INVESTIGATOR:	HODSON, Gordon - Psychology		
CO-INVESTIGATOR(S):	Danielle Molnar (dmolnar@brocku.ca)		
FILE:	16-190 - HODSON		
TYPE:	Ph. D.	STUDENT:	Mark Hoffarth
		SUPERVISOR:	Gordon Hodson

TITLE: Religious Attendance and Attitudes Toward Gay People

ETHICS CLEARANCE GRANTED

Type of Clearance: NEW Expiry Date: 1/31/2018

The Brock University Social Science Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 1/4/2017 to 1/31/2018.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 1/31/2018. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at http://www.brocku.ca/research/policies-and-forms/research-forms.

In addition, throughout your research, you must report promptly to the REB:

a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
c) New information that may adversely affect the safety of the participants or the conduct of the study;
d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved: Sandra Peters

Sandra Peters, Acting Chair
Social Sciences Research Ethics Board

Note: Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.